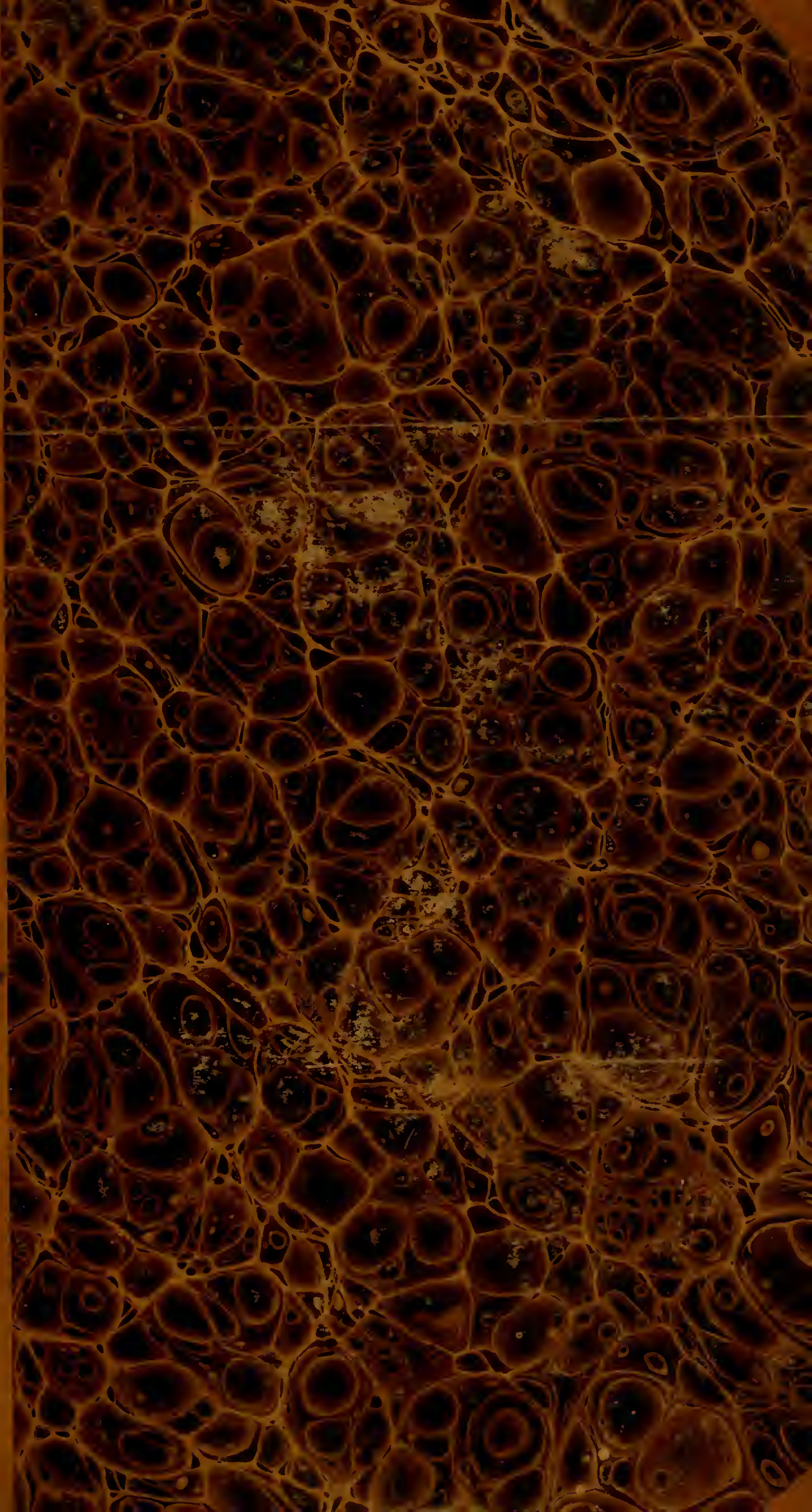

THE AMERICAN MEDICAL REVIEW, AND JOURNAL

OF ORIGINAL AND SELECTED PAPERS IN MEDICINE AND SURGERY.

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Auctoribus suus constat honos.—Bacon.

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PREFACE.

In presenting the Fifth Number of this work in a modified form, the Editors are influenced by the following considerations:

Although the press, both foreign and domestic, teems with medical publications, there are nevertheless but few, comparatively speaking, that possess sufficient merit to entitle them to particular analysis, or to admit of being wrought up into instructive and interesting articles. It is inconceivable what a multitudinous progeny of ephemeral and worthless productions are constantly obtruded on the attention of the profession; and how small the number of such, as are really valuable or worthy of particular notice. To exhibit an analysis of the former class would be as irksome to ourselves, as it would be unprofitable to our readers; and copious criticism would be equally foreign to the useful purposes for which this journal is intended. Occasionally, indeed, we may find it necessary to check presumption, to dissipate error, and to meet absurdity and folly with ridicule and contempt; but we desire that the character of our Journal shall be that of solid usefulness, and to this object our most strenuous efforts shall be constantly directed.

In lessening the number of our pages devoted to analysis, we are influenced not only by the paucity of current publications worthy of such notice, but also by a wish to make room for a more extensive department of original communications; and particularly as we have established a correspondence with several gentlemen of distinguished talents and extensive experience, whose practical observations will enrich our future numbers.

We have, however, no common-place apologies to offer for thus increasing the list of Medical Journals; nor do we profess to be inspired by an unprecedented degree of disinterestedness and public spirit. We frankly acknowledge that we are influenced by the same motives which commonly actuate men in similar enterprises, and that we identify our own interest with that of the public. We reject, however, the idea of pecuniary consideration, and calculate to benefit ourselves only in proportion as we become known to the public through the medium of interesting and useful communications.

☞ Having stated in an editorial note to Professor Smith's paper on Fractures, that this gentleman would hereafter be a regular contributor to our Journal, and passed some merited encomiums on him, it may be proper to state that his name was not added to the list of editors until the Journal was printed off.

J. EBERLE.

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ART. I.—*Anatomical Investigations, comprising Descriptions of Various Fasciæ of the Human Body; the Discoveries of the Manner in which the Pericardium is formed from the Superficial Fascia, &c. &c. &c.* By JOHN D. GODMAN, M. D. Lecturer on Anatomy and Physiology; Editor of the Journal of Foreign Medicine; Professor of Physiology to the Philadelphia Museum; Member of the Academy of Natural Sciences; Honorary Member of the Medical Societies of Philadelphia, Maryland, Baltimore, Lexington, Cincinnati, Pittsburg, &c.

CRITICISM, from the cognizance which it properly takes of the crimes of authorship, and from its being often prompted to the exercise of its severest prerogatives by unworthy motives, has long been proverbially odious. Indeed, it would appear, that reviewers too often enjoy a cruel pleasure in executing the just or unjust sentences of the literary tribunal upon the faulty or unfortunate. To heighten the zest of this savage sport, their ingenuity has been greatly exercised in inventing whatever would inflict the keenest sensations, and thus an appropriate technical phraseology has been formed, composed of all those cunning instruments of torture, which are regularly drawn forth whenever an unlucky author is to be flayed, roasted, or impaled. These are often employed, too, without even premising a soothing anodyne to deaden the sensibility of the victim, as is practised by the most merciful of those, who experiment upon the physical nature of one class of animals for the intellectual advantage of another. We question, however, whether the Neros of criticism have exerted the most paralyzing influence upon the spirit of literary enterprise. It is, indeed, a maxim in civil policy, that it were better that ten rogues should escape than that one innocent man should suffer. It is not so, however, in the literary community. Here merit may indeed be trampled upon, and its efforts for a time repressed; but, although, when combined with a morbid degree of sensibility, it may be sometimes struck to the heart, in most instances, these malicious goadings are but the stimuli, which rouse its intellectual prowess. The mistaken clemency and careless dispensing of common-place praise are faults, which permit the unworthy to pass on, or even subserve to their preferment, and, although less odious, are those which extinguish the very soul of ambition. He that withholds the merited reward of literary fame, injures only one, but he, who purloins from the rich treasure to bestow it upon folly, wrongs the whole community. Genius drops her hands in despair, when she sees that which was the object of all her hopes and fears, degraded into a toy by being conferred upon the undeserving. To works of merit the encomiums of reviewers are not often necessary. The discerning part of the community, under ordinary circumstances, soon assign to them their proper character. In some cases, however, the reluctance with which opinions are received that are counter to those principles, which form a part of every one's education, and the influence which, particularly in the medical profession, individual and party interests exert, often render it the duty of the impartial reviewer to expose the principles of a work, and to exhibit them in such a light as shall favour a fair and candid scrutiny. Whether or not these circumstances render it *necessary* that this should be done, it is always a pleasing task to contribute to the early diffusion of truth, and to give to the public a fore-taste which shall render them the more desirous of partaking from the original source.

Books, which are of an ambiguous character, and in which truth is often a passport to error, or error an obstacle to truth, are also to be critically unravelled; "they are of a mingled yarn, good and ill together; their virtues would be proud if their faults whipped them not; and their crimes would despair, if they were not cherished by their virtues." It is not often the unpleasant duty of a reviewer, however, to analyse a work, which exhibits but one tissue of faults, and yet there are cases, in which he can only acquit himself of the responsibility that rests upon him, by unreservedly uttering the whole truth, let the result be what it may. The authors of such books are of two kinds. There are those whose slumber of ignorance has been visited with flattering dreams of literary fame, and who, being possessed of a degree of native modesty, hesitatingly, with a trembling hand and averted eyes, slip their productions before the public. We could not find in our hearts to touch rudely the meek and tender spirit of such an author as this. We are so much of the order of mercy, that we would rather take a pinch of snuff from his horn box and permit him to pass on, knowing that there is room enough in the world both for him and us, and confident that humanity will drop upon his errors a tear of oblivious compassion. But observe the other class, they come before us frantic with anticipated honours, their confident brows carelessly bound with wreaths of their own weaving, insulting the understandings of those who cannot discern their merits, and compelling others to echo their self applause. The garrulous importunity, with which such demand literary fame, is as different from the intense and silent ambition of true genius, as the impatience of a spoiled child, who cries for the moon, is different from the sublime serenity, with which Newton contemplated the revolving sphere. There is no other way to relieve the community of their annoyance but to *whip them.*

We have not made the above remarks with the intention of biassing our readers for or against the work which we are to examine. The justness of them, as *generally* applied, we think will not be questioned, nor will it be denied that they might with equal propriety precede a favourable or an unfavourable review. If the character of the book be found such as to make an unfavourable application of them to itself, it is not our fault but that of the author.

The above work was announced some time previous to its appearance in two copious advertisements, one in English, the other in Latin, in which double form the work itself was also to appear. From this novel circumstance we may fairly infer, that the author would not merely address himself to the humble readers of English, but to the whole scientific world, of which the Latin language is the common bond and medium of communication. To correspond to so magnificent a ceremonial of annunciation, this should be of the royal family of books; and in glancing our eyes over the first pages, we gain other evidence of the importance of its contents. We are there told that it contains important discoveries, which directly resulted from "the mode of teaching anatomy by pure analysis," which the author informs us "it was his happiness first to introduce and establish by the fairest experiments," and which "is the only method which can free us from the trammels of long reigning prejudice or the dominion of ancient errors." On another page he says, "I am sure of receiving the grateful applause of every unprejudiced student, for having in this part of the science substituted simplicity for complexity, and regularity for confusion." In the next sentence, we are relieved of a little envious apprehension, by the candid acknowledgment that he has not wholly exhausted the subject, but "that other investigators may make such discoveries as will entitle them to *correct* and *modify some* of the *details* herein advanced." Again he says, "we ask no man to vouch for the truth of what is herein advanced, we wish all to examine and their testimony *will* be favourable."

Finally, in the spirit of Harvey and other investigators, he expresses his confidence in the imperishability of his discoveries, and says, " we wait patiently, convinced that time fixes every thing in its place," a most notable truth, and one which is not mal-apropos. Happy those authors who can thus confidently anticipate the rich feast of the world's applause, and happy those ministering critics, " Qui dapibus mensas onerent et pocula ponent," and who may be permitted at least to inhale their sweet savor! We trust that, in this instance we shall not be compelled " *malis absumere mensas.*"

The extracts which we have made above are merely flattering pledges, and if honourably redeemed, will fix the reputation of our author on a footing with that of Harvey, Hunter, and Bichat; for the genius which effects so great a revolution in science, as to free us from the " trammels of long reigning prejudice," is not the luminary of every generation. It completes its revolutions only at long intervals, to dispel intellectual darkness, and to mark the eras of mental progression.—If the contents of the volume are what the author thus leads us to suppose, little need we care for the sneering contempt with which the Edinburgh reviewers may be supposed to notice an American work, which makes its first appearance in two languages, perhaps, insultingly calling it a bilingual whelp, or giving it some other opprobrious epithet, in their usual scurrilous way. In vindication of our author we declare, that, if this *is* the " *only method* which can *free* us from the trammels of long reigning prejudice," we could wish for the honour of our country that he had published a polyglot of his researches, or had even translated them, not only into the learned languages, but into Adelung's twelve hundred aboriginal languages of America, the sooner to " free the world from the dominion of ancient errors."

But let us proceed to inquire what this new method may be, which here presents us with its first fruits, and which is to work such revolutions in science. It is developed in the introduction, and lest we should be thought not to comprehend every part of it, we here extract, for the satisfaction of our readers, every thing relating to it.

"By this method the *teacher* is always placed in the condition of a *learner*, and no authority is accredited but *demonstration*—no book is valued until its descriptions have been tested by a rigid scrutiny, in direct comparison with the structure as fairly exposed, and competently observed. This appeal from *books* and *authorities* to *nature*, disperses the clouds which have too long involved the science of Anatomy—removes the difficulties that have impeded the advances of the inquiring student, and opens the way to improvement, discovery, and truth. In order to satisfy such as may not have read the exposition of this method, which was published a few months since, the following extract may be advantageously presented.

"In consequence of a careful investigation of the modes of teaching anatomy, I have been induced to resort solely to the method of *Analysis* or decomposition. The subject is placed before the learner *untouched;* the knife is not used to clear obstructions from the way of the teacher, *previous* to the lecture. The STUDENT *sees* the relation of parts—the *Anatomy*, as it is left by the hand of nature: he observes the manner in which they are to be successively removed—he sees the situation and company with which they are always to be found, and perceives that in this mode of examination there are no difficulties to impede his progress, but inattention and neglect. The body is *decomposed* by the knife in his sight, and he soon acquires a clearness of information on the connexion of parts existing in the living system, which enables him at any moment to recollect what is to be encountered in any portion of the frame. The physiology he learns does not consist of a collection of scraps and fragments relative to each part separated, but it is the *whole* that can be learned, from *the whole* in combination. Should the teacher even be inadequate to the task of *telling* him *all* that is necessary, yet as the student *sees* the veritable anatomy for himself, his subsequent reading is always aided by recollecting the *actual condition* of the structure.

"In fact we believe no cause has acted more powerfully in retarding the advancement of the science of medicine, than the injudicious mode of teaching anatomy *synthetically*. In this way, we can easily account for the limited and unphilosophical views of physiology and pathology which have been given to the world. One teacher acquires a habit of paying an exclusive attention to the nerves, and all his views are *nervous*—another scrutinizes the arteries, and all the theories he forms are *inflammatory;* a third studies the veins, and *congestions* and *engorgements* are the night-mares that oppress him; a fourth pours over the absorbents, and he is in continual dread, lest the balance of the system should be destroyed; a fifth looks entirely to the muscles and his mind can perceive nothing but alternations, of laxity and tension, of tonic and clonic contractions, of debility and spasm!"

——"In teaching anatomy by the analytic method, the teacher has not so good an opportunity of making the parts *look beautiful* as in the ordinary modes of instruction. He must of necessity show the structure exactly as it is; and must be content with the advantages his class receives from correctly understanding the subject. While learning the relation of parts, the class is in general too usefully and agreeably employed, to think of the *sights* they might have, were the lecturer at liberty to prepare them before hand, at the trifling expense of destroying a few fasciæ, arteries, veins, nerves, tendons or muscles! It is true, that in this mode of teaching, the lecturer will find it no easy task to commit a lesson *to memory*, and he may occasionally err in his descriptions; yet as he opens the faultless volume of nature *before the eyes* of his class, an error in *his* speech does not place a veil over their sight; nor does an inaccuracy in his detail, produce any inaccuracy in their preceptions."*

"The discoveries now announced are the immediate fruits of the adoption of this method of teaching, and their importance may be gathered from a consideration of the following particulars. The fasciæ of the human body have heretofore been considered very numerous, and in a great degree independent of each other. One fascia has frequently been described under many different names. By these researches all the fasciæ have been reduced to *three, all* of which are fairly continuous at certain points. We show that all the fasciæ heretofore described, (with the exception of the temporal, palmar and plantar aponeuroses) are offsets or processes from these three fasciæ. The first and most striking advantage is the simplification of what has till now been unnecessarily esteemed complex. By explaining the connexion of the processes with the parent fasciæ, and pointing out their relations with the different structures, we are enabled to form a clearer idea of the natural and morbid condition of the parts; this is an advantage only to be appreciated by those who know how miserably inaccurate the ordinary conclusions relative to functions are, when drawn from the knowledge of the structure, obtained in the usual *synthetic* manner."

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* See the Introductory Lecture on "Analytic Anatomy," published by the class, Feb. 1824.

And can it be, then, that *this* is the mighty intellectual engine, which is thus brought forward, we will venture to assert, with five times the pomp and pretension which ushered in the Baconian philosophy? Does our author really mean, that this original and analytic method is nothing more than what every student has practised, who has entered the dissecting room, with his scalpel in one hand and the London Dissector in the other? or are the overwhelming discoveries intended exclusively for the learned, and hence locked up in the Latin edition, where

> "Illi indignantes, magno cum murmure montis,
> Circum claustra fremunt.——————————
> Ni faciat maria ac terras coelumque profundum,
> Quippe ferunt rapidi secum verrantque per auras."

So far as we can extract any meaning from these pages of our author, they tell us, that this new method is the demonstration of the constituent organs of the human frame, precisely in the natural order in which they occur from the surface toward the centre, and that, not by dividing them into systems, which would in this method be impracticable, but into sections, in which portions of all the organs are exhibited in their relative connection with each other. Thus, the integuments of a particular region are removed, and the fasciæ, the branches of arteries, veins, nerves, &c. are shown as they occur.

Now let the student, who may never have heard of our investigator's discoveries, call to mind his first essay in the dissecting room, and he will need no further description of this matter. Mr. Bell's dissections and the London Dissecttor have lead him precisely through the same course, and that without his having suspected that he was practising *analytic anatomy*, as the person who found to his astonishment that he had been all his life speaking prose. In his dissection of the abdomen, he will recollect that he first exposed the fasciæ, then the muscles, next the peritoneum, the abdominal viscera, the arteries, veins, nerves, ducts, and whatever else occurs in this interesting association of organs. This is the uniform mode, which is profitably pursued by students in all dissecting rooms, after they have required some knowledge of the general distribution and uses of the organs. The pompous assumption, then, of this mode of teaching, as an original and important discovery, is—let the candid reader say what. The application of it to public lecturing is equally absurd.

Probably the author is in the practice of lecturing to those who are already somewhat acquainted with the subject, and if so, he will find himself the less perplexed in his favourite course. It is the duty of teachers generally, however, to presume their audience wholly ignorant of the science, and to lead them on from its first rudiments. It is easy to conceive of the perplexity and confusion, which would result from the employment of this mode of teaching anatomy to beginners. The teacher must necessarily commence abruptly with displaying a filament of a nerve, a branch of an artery or vein, a portion of a muscle, wherever they might happen to be associated. This would surely set at defiance all anatomical and physiological arrangement, for we know that a clear method is the very soul of science, and is suggested by nature herself. What idea would the student be able to form of the general structure and offices of the nervous system, who were to see it thus displayed by piece-meal? or how much of the distribution of the blood-vessels would he bear in mind, from having seen here a branch and there a branch? or of the origin, insertion and offices of the muscles, without a knowledge of the bony apparatus, to which they are attached, and to the motions of which they are subservient? It would be more difficult to arrange facts acquired in this way, in any intelligible order, than to render legible the sybilline leaves.

The author proceeds upon the presumption, that the great object of anatomical science is to determine the precise relative locality of parts of organs in different sections of the system. This is, indeed, important, particularly to surgeons, ought not to be neglected, and may be a considerable part of the art of anatomy, but it is not the science, in which our object should be to display the integral systems, and constantly to impress upon the mind the grand physiological relations which they bear to each other.

The investigator frequently speaks of *synthetic* anatomy, in contradistinction to his own *analytic*. We believe, to do the author justice, that we have some obscure idea of what he means, but to do equal justice to English and Greek, the idea and the expression are singularly out of joint. The ordinary mode of teaching anatomy is, surely, as much analytic as that employed by himself, the analysis being only conducted in a different manner. In the former, a degree of arrangement is observed, and whole systems are separated, (not composed,) and displayed successively. Indeed, were the investigator to translate his book into Greek, "ΜΕΛΕΤΗι ΤΟ ΠΑΝ· (to industry all things are possible,") he would discover that the words anatomy and analysis are almost synonymous, the former being generic, the latter specific.

From the time of Hippocrates, anatomy has been regarded as nothing else but the analysis of the human frame. The author's synthetic anatomy, then, changing the terms of the equation, but preserving its value, is the *synthetic analysis* of the human body. Indeed, we never had any conception of synthetic anatomy till we read Ewell's Chemistry, in which, from the rapid advances which that science is making, we are flattered with the anticipation that we shall soon be able to chrystalize adult men. complete in all their organs.

Our author observes, that the *peculiar* excellence of his system, consists in subjecting every thing to the test of the knife; giving credit to nothing till it has been tested by observation; and in the teacher's being constantly placed in the situation of a learner. So far from perceiving any thing original in this, we had supposed, in the simplicity of our hearts, that no other mode had ever been pursued, since the time of Galen, who imposed upon humanity the anatomy of monkies. What systems of anatomy are now used, which are not founded upon demonstration? or who attempts to teach anatomy, but by displaying the parts in their natural connexions? With regard to those minute structures, which are beyond the reach of our senses, anatomists do indeed continue to conjecture, nor can demonstration be so fully employed as could be wished in physiological researches, but who is so dull as at this time to presume to conjecture with regard to the structure or relative situation of a muscle, an artery, a nerve, or a fascia? We can not but be astonished at such absurd pretensions to originality.

Although the author presents us with an analytic variety in his investigations, yet he seems to be particularly occupied with the distribution of the fasciæ, a department which has of late engrossed much of the attention of anatomists, and in which, while a few important practical observations have been made, a thousand ephemeral discoveries have passed away like the early dew.

No term in anatomy is used with less precision than that of *fasciæ*, it being often applied to parts that are specifically different, in their structure and in their functions. The tendonous aponeuroses, and the accumulated laminæ of cellular tissue, are both thus denominated. By nature, however, they are sufficiently distinguished, and much perplexity must necessarily result from confounding them. The cellular tissue, we know to be one of the most general of the elementary textures, not, indeed, itself constituting a distinct system of organs, but serving as the primitive basis of the whole frame. It is not only the distinguishing and connecting medium between the different organs, but it is an important element of their organization, entering into their structure and connecting together the fibres, which constitute and characterize them. Hence it is every where continuous, and may be traced through organs of different textures. Thus, we find the cellular tissue issuing from the interstices of the muscles, and from between the fibres of tendons and ligaments, and blending with that which is exterior to them. In denuding with the scalpel the tendonous expansion of the external abdominal muscle, who has not observed, that, as the dissection is continued from above downward, if the integuments be merely flayed off with the blade or handle of the knife, the investing loose fascia constantly accumulates upon the surface of the tendon; and that to expose this completely, it is necessary to divide with the edge of a keen knife, at each stroke, the laminæ which issue from the interstices of its fibres, and which are folded downward.

A cellular continuity may be traced between almost any two remote parts of the system, it being thus diffused through muscles, ligaments, tendonous expansions, &c. The tendonous aponeuroses, which are often called fasciæ, originate from muscular fibres, either on the surfaces of muscles as in the leg and arm, or continued from their extremities, as is partially the case with the fascia lata of the thigh. They sometimes terminate in a definite insertion, and sometimes they are lost in the cellular web, which is continued from their interstices; but they retain every where their distinct character, and their fibres are no where found gradually degenerating into cellular texture. Sometimes, indeed, a few tendonous threads can be discerned in a cellular fascia, giving it firmness and strength, but even then, their muscular origin can always be traced out.

Although the very name of fasciæ, as it is ordinarily used, is ominous of perplexity and confusion, we will not anticipate any thing so repulsive in our author, but proceed to give him a fair scrutiny.

The investigator has at considerable length described, what he denominates the *superficial* fascia. Every one knows that in addition to the subcutaneous cellular texture, the muscles are invested with a laminated tissue, which also sending processes between and beneath them, cause each muscle to be enveloped in a proper sheath. Let us see what Bichat says upon this subject.

> "The cellular texture is very abundant in the muscular system; I know of no system that has a greater proportion of it. This texture forms a very evident covering around each muscle. This covering is most commonly loose, filled with fat, easily distended with air in emphysema, and serum in anasarca. At other times it is more dense, compact, and really arranged like a membrane. Such, for example, is the case with that which covers the great oblique muscle of the abdomen, and the dissection of which on this account, students at first find very difficult. The other abdominal muscles, the trapezius, the serratus major, and the great dorsal, exhibit also this arrangement. We might say that in this way nature compensated for the aponeuroses, which are wanting on the broad muscles of the trunk. Besides, this covering has only a membranous appearance; it has nothing of its organization, it disappears in the infiltration in which all the true membranes remain."

Wherever muscles are elevated above the common surface, this covering is, for obvious purposes, stronger and more distinct, as is the case with the sartorius, the sterno-cleido-mastoideus, &c. This structure, which of course covers the whole muscular surface, and all the superficial organs, is that which the investigator has named and adopted. We have always supposed it the duty of every anatomist, in teaching, to point out the variations in density and volume, which occur in different parts of this expansion, as well as those peculiar arrangements which are important to the surgeon, and we believe that it is pretty uniformly done. We ourselves have at least *attempted* it, although we have had the misfortune to be somewhat insolated from the profession, and certainly did not take the hint from Dr. G. To describe a distinct superficial fascia, however, the different parts of which all originate from a certain central portion, continued here and produced there, as the nerves emanate from the brain, and the arteries from the heart, is calculated to convey erroneous ideas of this structure, which might as well be said to originate from beneath the muscles as from above them. Indeed it is every where diffused, and has no obvious centre or starting point. This, however, is the course pursued by our author, to the justness of which remark he shall himself bear testimony.

"The fibrous" (fibrous?) "membrane which covers the whole of the trunk, and a very considerable part of the extremities of the body, is one of the really important and perfectly simple structures, which has been made difficult, solely by considering it in fragments, and describing those with most tedious minuteness—though without any compensating clearness of arrangement, or accuracy of detail. With a hope of exhibiting this part of anatomy more advantageously to the student, and of removing some of the obstacles before mentioned, these investigations are begun—and should the effort be followed by any success, the author will be encouraged to extend his attention to other parts of equal importance, which hitherto have been offered to the learner under a similar veil.

" By making a crucial incision through the integuments of the abdomen, from the ensiform cartilage to the pubis, and from the crest of one ileum to the other, going no deeper than the loose cellular substance, we may reflect the integuments on all sides, so as to leave the *fascia superficialis* untouched. If we then lightly make another crucial incision, we divide the *fascia superficialis*, and encounter a layer of cellular substance, more delicate than that which lies between the integument and fascia, yet in general very distinctly perceptible. By dissecting cautiously, the fascia may be reflected in every direction, though it can be done with more ease where it lies over the tendon, than where it covers the muscular fibre.

" Let us first examine the inferior part, which we shall find descending towards the top of the thigh, slightly connected by the intervening cellular texture to the tendons of the abdominal muscles, until it reaches Poupart's ligament, to the external or iliac portion of which it is more closely attached. As we approach the os pubis, near which it covers the spermatic ring and cord, the handle of the knife may be used to separate it from the tendons—and by looking under the fascia, when thus raised, without reflecting it, we obtain the fairest view of the real character and situation of the spermatic cord. The fascia receives a very considerable thickening near the pubes from the lamina of cellular substance exterior to it—and it is continued over the corpora cavernosa penis, as well as sends down a strong sheet into the scrotum, which has received the name of Camper's ligament. This portion descends obliquely in the direction of the cord, which it covers, and of the testicle, which it surrounds. The external portion passes downwards, over the whole of Poupart's ligament, to the upper part of the thigh, lying immediately under the integuments, and over the cluster of lymphatic glands and vessels, which fill up the depression below Poupart's ligament. As it approaches the top of the thigh, it gradually becomes thinner, and loses its regularity of texture, verging to the appearance of common cellular tissue: it may still be traced some distance down the inner part of the thigh, until it is lost in common cellular texture, lying in contact with the fascia lata and integuments. We may next raise the fascia superficialis from over the crest of the ileum, and pursue it backwards to the spine, and we may follow it downwards covering the whole of the *gluteal* muscles, where it is strengthened by large additions of cellular texture. As we approach the tubera ischii, the fascia becomes more closely attached to the surface, and in many instances seems to terminate there. This, however, is not the case, as it may be followed across covering the whole of the perineum, forming the strong fascia, which presents to the knife immediately after the first incision in lithotomy. We trace it from the perineum upward, until we lose it on the under surface of the penis, where it mingles with the covering which this organ derives from the anterior part of the fascia.

" Returning to the central part of the abdomen, we prosecute our dissection upwards. We raise the fascia superficialis from the tendonous sheath of the rectus with facility, but find it so closely adherent to the proper coat of the muscular fibre, as to require some care for its separation. This, however, may be effected with comparative ease, and we lift it from over the lower part of the sternum and pectoral muscle, and from the superior part of the external oblique. We trace the fascia with great facility towards the spine, and find it giving a strong covering to the muscles of the back.

" When we raise the anterior part to within a hand's breadth of the clavicle, we see the *platisma myoides* is on the outside of the fascia, and in immediate contact with the integuments, stretching obliquely upwards to the angle of the jaw, its anterior fibres ascending to the angle of the mouth, and the posterior in many instances rising to the zygoma, and connecting itself with the outer part of the orbicularis oculi.

> "Having removed the *platysma* carefully, we then obtain a view of the superficial fascia covering the whole of the neck, ascending in front to the edge of the chin, where it is lost in cellular and muscular substance. As we pass towards the angle of the jaw, we find it rising higher, (though thin,) covering the masseter muscle, attaching itself to the zygoma with firmness, and extending towards the ear, so as entirely to overlay the parotid gland, and prevent us from obtaining any distinct idea of its precise figure. From the back and upper part of the zygoma we see it passing up on the outside of the temporal fascia, and including in its substance the *anterior auris* and *attollens aurem.* The portion covering the shoulders and back of the neck continues over the occipital belly of the occipito-frontalis, and may be traced over this muscle, and continuous with the lateral portion until the muscle becomes united with the scalp."

We perceive that the author denominates his *fascia superficialis* a "fibrous membrane," from which we are positively compelled to infer, that he gives this name to the cellular tissue, which we have mentioned above, or, that he confounds this last with the tendonous coverings with which the muscles are often invested, and the fibrous expansions by which certain parts are strengthened.

In tracing the above fascia, the author developes one of his most important discoveries.

> "Thus the sterno-cleido-mastoideus is enclosed in a distinct sheath, the same fascia forming both the deep and superficial covering of the neck. This part of anatomy, although it may have been *known*, has never been described with precision, and I may claim the merit of a discovery with much less danger of losing my title than has occurred in the case of others."

The discovery is, then, that the sterno-cleido-mastoideus, like every other muscle, has a proper sheath of cellular tissue, which we can inform him is the more dense and obvious, because it is not enveloped by other muscles. "Even Colles (he continues) with all his minuteness has not attended to this beautiful arrangement." Neither has Colles, with all his minuteness, any where stated, *that man has precisely two ears.*

The pathological remarks which follow are meagre in the extreme, obviously the result of limited practical observation, and wrought in for the purpose of magnifying the importance of the above *discoveries.*

We proceed, however, to the more important points to which the author so confidently challenges our attention; trusting that he will soon rescue himself from the perplexities in which he seems to be involved, and give us an opportunity to redeem ourselves from the imputation of cavilling and carping at every thing with which we meet.

At the head of Section III. we find: "Formation of the pericardium from the fascia superficialis." Here we have an observation which is unquestionably original. In behalf of our author, we defy the book worms of ancient literature to produce, from Greek, Latin, or Arabic lore, a single sentence which can be interpreted to render in the least equivocal his title to this *original absurdity,* which we think he is in much less danger of losing "than has occurred in the case of others." In saying that the pericardium is formed from the fascia, he does not mean that the cellular tissue of the surface is merely continuous with that of the pericardium, for this was known even to us, and surely is not a discovery; no, he evidently means that the pericardium is generated by, or grows out of the above fascia. But does he recollect that the fibrous capsule of the heart and the superficial fascia are of structures as entirely different as those of the bones and muscles? What says Bichat on this subject? "All these membranes have, as a common basis, a fibre of a peculiar nature, hard, elastic, insensible, little contractile, not resolvable by maceration, as Haller has said, into cellular tissue." To render it in the least plausible that this membrane forms the pericardium, it is necessary that we should prove physiologically, that the cellular tissue is capable of generating the fibrous membranes, a proposition which is so far from being self-evident that it appears to us to be absurd in the extreme. Does he attempt to establish it? No, he merely points out a cellular (not a fibrous) continuity between them, and infers from it, as his discovery, that the one forms the other. Should this, however, notwithstanding all our logic, be adopted as a discovery, we will lose no time in entering our claims to one of our own, which, however, is not altogether original, because it was suggested by the above. It is this, that the thumb nails form, generate and produce, not only the whole cuticle that covers the body, but also the epithelium, which by some anatomists is supposed to invest the whole free surface of the mucous membranes. Let all, who admit the discovery of the investigator, examine for themselves "and their testimony *will* be favourable."

> Our author observes that "However singular it may appear that this arrangement should not have been discovered until this time, it is by no means as singular, as that anatomists during so long a time should have remained contented to believe that a *serous* membrane like the PLEURA, could form a strong FIBROUS membrane like the PERICARDIUM."

And who of any note has ever asserted, or conjectured, that the pleura forms the pericardium? Such a presumption would be equally as absurd and unnecessary as his own. He seems to be lead by his ignis fatuus of analytic anatomy, to the belief that each part of the system must be generated by, or grow out of some other part with which it is continuous, and not that there is a simultaneous organization of the different textures, resulting from the peculiar action with which the God of nature has endued the vessels of each part.

Let us see what is said by the standard authors upon the continuity of parts. In volume III. p. 67, Bichat observes:

"This manner of describing the course of the mucous surfaces, by saying that they are elongated, dip down, penetrate, &c. from one cavity to another, is no doubt not conformable to the progress of nature, which creates in each organ the membranes belonging to this organ, and does not thus extend them by degrees; but our manner of understanding it is better adapted to this language, the meaning of which the least reflection will show.

Again, "The word origin should only be understood in relation to anatomical arrangement. In fact, the nerves are formed at the same time as the brain; they are rather organs of communication with this viscus, than elongations of it. If we take a view of the functions of one part of the nervous system, we shall see that the termination is at the brain, and the origin is upon the surface. Is it not said that the nerves go towards this or that part, that the arteries take this course, wind about, &c.? These are only metaphorical expressions, the least reflection will determine their meaning."

Bostock also remarks, that these expressions are only to be understood in a physiological sense. If, then, this language is not used by these authors in relation to the nerves, arteries or parts of the same membrane, without such qualification, what nonsense, inconsistency and absurdity would it not be in them to assert that the pleura, a serous membrane, one of the elementary textures, *forms* the capsule of the heart, a fibrous membrane, also of a peculiar and independent structure? We believe that, were such opinions to be generally attributed to the illustrious dead, their canonized bones would burst their cerements.

In what our author has said with regard to the femoral and brachial fasciæ, we find a confused and inexplicable account of what never can, and never need be minutely described, viz. the cellular tissue, as it is every where diffused between and around the muscles, blood-vessels, nerves, &c. We are confident that a hundred different persons might attempt this task and each one would come out with a different account of it. A general description, indeed, is the only one which can convey any idea of it, for surely no one would think to describe intelligibly a piece of net-work, for instance, by tracing the thread, of which it is wrought, through all its perplexities.

Our author again demands our admiration upon his discovery of that, to be ignorant of which, would argue us destitute of the first principles of anatomy, viz. that the cellular tissue is connected with the ligaments of the shoulder and hip. But if he means that the fibrous aponeuroses are continuous with the fibrous capsules of these joints, and claims it as a discovery, we refer him to Bichat.

> "Though the numerous organs which enter into this classification, belong to very different apparatus, though they seem to be spread here and there in the economy, without holding together at all, and though all appear insulated, yet they are almost all continuous and connected; so that we may consider the fibrous system, like the vascular and cerebral nervous systems, that is to say, as having a common centre, from which all the different organs go that form its divisions."

We will conclude our observations on this part of the investigations, by inquiring of our author, what may be the drift of these discoveries relative to the pericardium, the ligaments of the joints, &c. granting all the anatomical importance which he demands for them. What physiological or pathological inferences follow? of what value are the observations to the physiologist, the physician or the surgeon?

The investigator's Sec. VII. on irregularities of structure, appears to have been got up for the purpose of ushering in, in the most dignified manner, another discovery, viz. that of a small muscle of the thyroid gland. It may be regarded as the *currus triumphalis* of this little stranger. If, however, our own observation and that of a friend, on whose acumen we rely with confidence, deceive us not, this is nothing more than a few fibres of those muscles, which always cover this gland, blending with its investing fascia.

The chapter on morbid anatomy we regard as far the most valuable part of the investigations, although of minor consequence in the estimation of our author, who apparently introduces it for the purpose of eking out the volume. We are under obligations to every one, who adds to the stock of data which constitute the wealth of our profession. We cannot think, however, that the number or importance of his morbid phenomena are sufficient to stamp the character of utility upon the volume of which it forms so small a part.

On turning to Section IX. the first object that strikes our astonished sight is a picture, which every one, who has seen the book, will distinctly remember. We profess none of that squeamish delicacy, which revolts at any thing that the interests of science may require. There are very few *professional* books, however, in which it is thought necessary to introduce representations of this extraordinary character, and when they do occur, they are at least accompanied with the silent apology of utility. We regret to say that, in this instance, we can find no such palliating circumstance. He does, indeed, observe that some sceptic had doubted, upon what grounds we know not, the existence of the hymen, but, surely, the profession would have been satisfied with his testimony that it had occurred three times in his dissecting rooms.

We have no doubt, however, that the above embellishment will render the book more valuable in the estimation of the groundlings, nay, that it will even poineer its way beyond the limits of the profession, "but it can not but offend the judicious, the censure of which one *ought* to o'er-weigh a whole theatre of others."

Section X. concludes the author's researches, and our unpleasant task. It contains an account of another discovery, viz. that of the vena azygos dorsalis. We confess that, from the foregoing disappointments, we could not but anticipate, in this seal-ring of our author's, some two-penny matter, as it really proves to be.

With the author's researches, however, his anatomical investigations do not terminate. We perceive that the same title, which graces his own discoveries, is continued by the license of authors, in a most comprehensive sense, through fifty pages of an entirely different character and which give the book the body of a respectable octavo. He first investigates an anatomical table invented by Mr. Sellers, whose ingenuity in mechanical *investigations* we very much applaud. The anatomical investigations next embrace a translation of Scarpa on the minute anatomy of the bones. Did we feel ourselves qualified to make critical remarks upon the writings of this illustrious man, this, for obvious reasons, is not the occasion which would call them forth.

In vindication of the apparent severity of our strictures, we have only to say, that we have dealt with the writer of the volume in question only as an *author*, and in such a manner as the character of the book and the circumstances under which it has been brought forward, render necessary. We have been instigated by no personal pique nor prejudice, for the author is entirely unknown to us, except through the medium of his writings and to them we direct every discerning and candid reader for our best apology. To us they are a dreary waste, in which the restless and impatient eye wanders from page to page, unrefreshed by one blossom of genius or one verdant spot of fertile thought. Let every one, who would retort censure upon *us*, give the book " heedful note, and if its fault do not itself unkennel in one *page*, it is a *slanderous* ghost that we have seen, and our imaginations are as foul as Vulcan's stithy."

N. R. S.

Art. II.—*Das Venensystem in seinen Krankhaften Verhæltnissen, dargestellt von.* Dr. F. A. B. Puchelt, Ausserordentlichem, Professor der Medicin an der der Universitæt Leipzig, &c. &c. Leipzig, 1818, 8vo. p. 405.

The venous system in its morbid relations, &c. &c.

There is no subject in practical medicine upon which inquiry and observation have been less active, than the one which forms the object of the present volume. Hodgson's work on the diseases of the arteries and veins, is a publication of considerable value, but it is confined almost exclusively to the surgical diseases of the sanguiferous system, or to such affections as depend on organic or structural derangement. Mr. Puchelt, who is evidently a man of extensive erudition, and of habits of close observation and research, has taken a much more comprehensive, and, in our opinion, philosophical view, of the morbid relations of the *venous* system. He endeavours to show throughout this work, that the veins have very extensive and important pathological relations,—that they are susceptible of morbid conditions, independent of organic or structural disease,—that in short, their vital properties, and consequently their functions may be so deranged as to become the *punctum saliens* of diseased action throughout the system.

In speaking of the *venous system*, the author understands both the containing and contained parts—the veins as well as their contents—and this aggregate of solids and fluids he calls *venosity*. This venosity, or in other words this aggregate of the solids and fluids of the venous system, may predominate too much, or it may exist in a state of morbid diminution. In the latter condition, there is a deficiency of venous blood; that is, the characteristic properties of the venous blood, as wellas its peculiar constituent principles, do not exist in due degree and proportion. In consequence of such a state of the blood, the veins will be less distended, and undergo less exertion; and therefore, according to a well known law of the animal economy, the irritability of these vessels will be augmented at *first,* but afterwards undergo a gradual diminution, so that their action will be reduced, and the vessels themselves assume a contracted condition. This state of venous system occurs in dropsical, cachectic and chlorotic affections. The author thinks it exceedingly problematical, whether this "morbid venosity" can appear as an idiopathic affection. Unquestionably various diseases originally located in other parts, may both lessen the quantity, and reduce the characteristic properties of the venous blood, and it is most probably in all instances to be regarded as a secondary affection.

An "*increased venosity,*" is perhaps still more common than the opposite state we have just mentioned. In what however does this "*increased venosity*" consist? According to the author, this condition depends immediately either on a superabundance of venous blood, or on a morbidly increased state of the characteristic properties of this blood. In relation to this latter circumstance it may be observed, that if it be true, as is maintained by physiologists, that the venous blood is characterized and distinguished from the arterial, by the predominance of carbon and hydrogen in the former, it is evident, that a blood which contains too great a relative proportion of these substances, possesses the peculiar properties of venous blood in too high a degree, and may give rise to various morbid states of the general system. If with general *venous plethora,* the action of the veins and the function of respiration are performed with increased vigour, health will not be disturbed. But if this due relation between the quantity of the venous blood, and the vigour of the veins and of respiration is destroyed, disease must be the consequence. Thus if the quantity of blood conveyed to the lungs is great, and the function of respiration is imperfectly performed, then the venous blood will not undergo a sufficient change in the lungs, and it needs no argument to prove that an inadequately decarbonated blood will act injuriously on the organization in general. Our author thinks that this "*increased morbid* *venosity,*" is occasionally extended to the capillary system; though this occurrence is generally confined to the capillaries of some one part, these vessels becoming sometimes so altered as to acquire a venous character.

We have already stated that the author considers what he calls "*decreased venosity,*" as invariably a consequence of some other affection. With regard to the state opposite to this, namely, "increased venosity," he considers it as, usually, a primary morbid condition, and dependent frequently on causes that influence the system from without. The principal causes which contribute to this state of the venous system, are, according to our author, the following: diet, air, cold, heat, certain contagions, mechanical causes, exercise, the depressing passions, too much sleep, excessive venereal indulgence, or a total abstinence from it, suppression or cessation of the catamenia, and various diseases. The operation of these causes forms the subject of the third chapter; but as the author's observations on this head, do not appear to be essential to the exposition of his general and leading sentiments, in relation to the pathological conditions of the venous system, we omit entering into an account of his remarks on this part of his subject.

In a state of inordinately *exalted venosity,* there exists a want of harmony in the venous system itself, the moving power does not possess a due relation to the mass to be moved. In consequence of this state of things, the venous circulation will not go on with regularity and uniformity through the various parts of the system, that is, the motion of the blood will be accelerated in one part, and morbidly retarded in another, and give rise to that state of local venous engorgement which is called *congestion.* We will not stop to inquire with our author, into the particular manner in which such congestions are produced; it is sufficient for our purpose to know that they do occur, and to state some of the prominent circumstances connected with, and predisposing to, this state of the venous circulation. The disposition to particular determinations of the blood, varies in a striking and almost uniform manner, from infancy to old age. In infancy, and particularly during the period of dentition, the head is the part to which the blood is especially determined: at the age of puberty we find the determination directed upon the genital organs; in middle age the abdominal viscera become the part to which the blood is particularly determined, and in old age, it is again directed to the head. In proportion as the arterial or venous systems predominate, so will these congestions be of an arterial or venous character. In those parts especially, where the venous system is particularly developed, or in which it naturally predominates, the congestions, if any occur, are venous. It is thus that the abdominal viscera, are more generally in a state of venous engorgement than any other parts of the body. *Congestion,* according to our author, is always seated in the *capillary* system, and must be distinguished from the mere accumulation of blood in the trunks and large branches. Venous congestion is distinguished from arterial, by the former supervening in a slow and gradual manner, and by its being less apt than the latter to disturb the functions of the organs in which it occurs. It is also of much more protracted duration, and more frequently productive of chronic diseases than arterial congestions.

The symptoms, which indicate a morbid *accumulation* of blood in the *vena porta, cava,* in the right auricle and ventricle of the heart, and in the pulmonary artery, are anxiety, a sense of fulness and weight in the præcordia; disorder of the abdominal functions; dyspnoea, moderate palpitation, and he thinks, pulsation in the epigastrium. The author here introduces some observations on the pulsation of the veins. He refers to a case reported by *Steinbach,* in Hufeland's Journal, in which *venous pulsation* was very conspicuous. The person in whom it occurred, was labouring under remittent fever, and was also much troubled by hæmorrhoidal affections. During the paroxysm of the fever, all the superficial veins, even the smallest were seen to pulsate in a lively manner, and synchronously with the pulsation of the arteries.

Venous hæmorrhages.—The author divides venous hæmorrhages, into such as are the consequence of some mechanical injury or rupture, and such as occur without any obvious injury or opening. Of hæmorrhages, from the spontaneous opening or bursting of veins, he adduces a number of interesting examples from authors, as well as from his own experience. He agrees with Bichat, that the latter class of hæmorrhages, are to be ascribed to a sort of transudation; or exhalation of the blood, from the ordinary exhalents of the parts in which they occur. They are not, however, a *mere* transudation, or passage of the blood through the relaxed or debilitated capillaries. Like the natural exhalations of the body, they are the result of a secretory process, and this opinion is confirmed by the fact, that these hæmorrhages almost always occur from surfaces and organs of secretion. Such hæmorrhages are always attended or preceded by venous congestion in the part from which they proceed; and they almost invariably occur from parts situated below the diaphragm, and particularly from parts within the abdomen. The author considers the catamenia as a venous hæmorrhage.

Venous Inflammation.—It is not easy to draw a well defined line of distinction, between congestion and inflammation. The author contends, that the only difference between inflammation and congestion is, that in the former *all* the capillary vessels, of a part, are dilated and engorged, whereas in the latter, this condition occurs only partially; the majority of these vessels remaining in their natural state. In the former state, that is, when *all* the capillaries are affected in this manner, the functions of reproductive, and recrementitious secretion are suspended. In consequence of this state of things, the sensibility an irritability of the affected parts become morbidly increased, and give rise to the different phenomena characteristic of inflammation. According to this opinion then, congestion, or a general engorgement of the vessels, is always the first link in the chain of morbid circumstances, that lead on to inflammation. The true difference between inflammation and congestion appears to us to be; that in the former there is connected with vascular engorgement, a morbid state of the vital properties of the capillaries; whereas in the latter, the sensibility and irritability of the congested vessels, remain in their natural state, and perform their natural functions, though perhaps in a less active manner.

That change of the capillary vessels, which constitutes inflammation; or, that congestion of these vessels which precedes, and is an essential circumstance of inflammation, may, according to the author, proceed either from the side of the arterial or venous branches,—that is, the congestion and consequent alteration of the vital properties may exist, either in the venous or arterial capillaries. There are, therefore, two kinds of inflammation, the *venous* and *arterial.* The characteristic circumstances of the former variety of inflammation, are, according to the author, the following:—1. Venous inflammation appears most commonly in those parts, in which the venous system predominates over the arterial. This is particularly the case with the liver; in the spleen, and even in the lungs. This variety of inflammation is also apt to occur in the mucous and serous membranes. The author thinks that the inflammation of the brain in hydrocephalous is of the venous kind:—2. Venous inflammation arises from the influence of causes, that have a tendency to favour the increase of the quantity and peculiar character of the venous blood. This kind of inflammation, is also more particularly observed to occur in individuals, in whom other symptoms of an increased "venosity" manifest themselves, such as hæmorrhoidal affections, &c.—3. The progress of venous, is in general more slow than that of arterial inflammation:—4. In relation to the individual symptoms, it may be observed, that the pain of venous inflammation is often very trifling, and in some cases entirely absent. This is not only the case in inflammation of the venous trunks themselves, but also in venous inflammation of other organs; as in pneumonia, the pain is not acute and piercing, but dull and heavy; the colour of the affected part is darker, and the swelling much greater than in arterial inflammation; generally, the function of the organ, affected with venous inflammation, is exceedingly deranged. In venous pneumonia for instance, in which scarcely any pain is experienced, the respiration is generally extremely laborious and anxious. In inflammation of the veins the pulse is almost always frequent, small, somewhat tense, often irregular. In venous inflammation of other organs, the pulse is less frequent, but always small and rather tense.

The author in the next place, gives an account of seven cases, of what he considers inflammation of the *vena cava.* Of these we shall select only the following case.

"Mrs. P. aged fifty-seven, of choleric temperament, and of an atrabilious appearance, was, in the summer of 1816, suddenly seized with complete syncope; from which, however, she soon recovered, and remained in apparent good health, until February 1817, when she contracted a cough, which was regarded as catarrhal. Expectorant remedies were prescribed; but the cough grew worse from day to day; acquired a spasmodic character, and was particularly aggravated by ascending stairs, even of a few steps. She experienced no particular pain or uneasiness, except what was created by the cough. On the morning of the 7th of March, she was suddenly seized with a chill throughout the whole body; which was followed by considerable fever, accompanied with pain in the right side of the thorax. In the afternoon Dr. P. found her skin moist and warm, the pulse frequent, irritated and somewhat hard; respiration was hurried but not oppressed, or attended with feelings of anxiety and distress. The disease was now viewed as a case of pleurisy, and remedies were directed conformably to this diagnosis. On the eighth day, the pain in the side had entirely disappeared; but the pulse as well as the respiration remained extremely frequent; the cough was not attended with any expectoration. She was now bled to the extent of *six ounces;* the blood was covered with a thick layer of size. The extreme frequency of the pulse and respiration, as well as the dry cough, continued without any perceptible change until the tenth. A laxative deobstruent mixture was now administered, and on the eleventh, as she passed a very copious stool of black matter, she suddenly sunk into an alarming state of syncopy, from which she recovered slowly.

When Dr. P. came to her, she had recovered her consciousness; but he found her much prostrated, with a very small and frequent pulse, and a pale and shrunken appearance of the countenance. Epespasties were applied to the legs, and liquor ammonia was administered in small doses. The unfavourable character of the pulse and respiration, just mentioned, continued without alteration; she became restless, without, however. suffering the least pain or anxiety of feeling. This state of things gradually assumed a more alarming character, until the twelfth, when she died suddenly, having been perfectly sensible to within a few minutes of death. On autopsic examination, the following appearances were noticed: The body was well nourished; the muscles were of an unusually dark colour; the abdomen was tumid, the chest contracted. On opening the thorax the lungs were forcibly protruded; the right lung adhered to the pleura; the appearance of this viscus was natural; a red, frothy fluid was copiously discharged from incisions made into its substance; the heart was sound, but appeared unusually flaccid. But the *vena cava inferior*, was dilated to two inches in diameter, as far down as the diaphragm; its sides were very white and as thick as those of the aorta. In this dilated portion, there was a polypus of the size of a " large nut," whose pedicle extended up to the right auricle; the liver was of considerable size, but appeared sound, nor was there any morbid appearance discoverable in the intestinal tube."

It may be doubted, however, whether this case can be properly given as an example of inflammation of the vena cava. Frank and Kreysig, mention an uncommonly frequent pulse and hurried respiration, as symptoms of venous inflammation, but these phenomena are so frequently observed in other affections, that no reliance can be placed on them, as diagnostic signs in the present case. It must nevertheless be confessed, that the thickened sides of the dilated portion of the vein, and the polypus, give some probability to the idea, that there existed inflammation in the affected part.

We omit noticing the other cases detailed by our author, for they appear to us, to be even more equivocal as examples of venous inflammation, than the foregoing case. Having given the result of his own experience upon this subject, Mr.

P. proceeds to relate cases of venous inflammation, on the authority of other writers.

*Meckle** attended a woman, who after a premature labour, was attacked with fever and pain in the pelvis. The pain evidently depended on inflammation, and after a good deal of suffering she died. On dissection, an abscess was found between the uterus and rectum, the omentum adhered to the right ovarium and tube. The veins of the uterus and the spermatic vein were turgid; their sides were considerably thickened, and they contained a large quantity of pure pus; the vena cava, in the neighbourhood of the right kidney too, was found to contain pus in considerable quantity, as well as a large polypus.

Reil† mentions a similar case. He found the right renal vein, and a large portion of the vena cava inflamed, red, swollen, and filled throughout with a plug of fibrous bloody substance, containing a fluid resembling pus in its centre.

A woman aged thirty, was delivered with much difficulty, of a large healthy child. Very considerable hæmorrhage followed the expulsion of the child. On the third day she was attacked with strong fever and pain, in the region of the uterus, which gradually extended throughout the whole abdomen. On the fourth day after this attack the fever subsided; but the pain continued for a week longer. At this time the milk in the breasts disappeared entirely. In the third week after delivery, she became affected with remittent bilious fever, which in the course of two weeks assumed an intermittent form; and this finally terminated in hectic fever, attended with a puruloid expectoration, and pain in the region of the liver, and, at last, in the left hip and groin. On dissection, the *crural vein was found as white, hard, and*

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* Sasse. G. Guil. de vasorum sanguiferorum inflammatione. Hal. 1795, p. 45.

† Ueber die Erkentniss und kur der fieber. 2 ter. Bd. (Halle, 1804.) S. 329.

compact as an artery; this was particularly observable where it passes under Poupart's ligament, and its cavity contained blood, mixed with a large portion of pus. On being carefully washed, the inner membrane was found to be looser than common, and covered with an artificial or inflammatory membrane, which easily separated in large pieces. The valves were thickened, and some had a lacerated and dark red appearance.*

Clark† mentions several instances in which he found the veins of the uterus filled with pus, in women who had died of puerperal fever. *Wilson*‡ saw the sides of the larger veins of the uterus thickened, so as to have their cavities entirely obliterated in some parts. The iliac veins also, with their larger branches were much thickened, and the membranes of the cava, were at least three times thicker than in a natural state, and contained upwards of four ounces of pus, which was prevented from reaching the heart, partly by a contraction of the *cava,* just below the opening of the hepatic vein, and partly by a mass of pseudo membrane and lymph, that plugged up this contracted portion.

The author next speaks of inflammation of the veins from external injuries, and particularly from bleeding. The dangerous consequences of accidents of this kind, are now well understood. Indeed, it seems to be generally admitted, that venous inflammation, is a much more dangerous affection than inflammations of the arteries. The author quotes a number of cases of this kind, but he adds nothing of consequence from his own observation.

We pass over our author's chapter on the "*Dilatation of the veins,*" as affording nothing of particular interest or value, either in a practical or pathological point of view. It is proper to state, however, that he considers *varix,* totally distinct in the mode of its origin, seat, and character, from "mere dilatation of the veins." They differ, he says, in form, and in their seats. *Varices* are *globular* swellings; whereas dilatation of the veins, consist of cylindrical enlargements. Varices are always seated in the *smallest* venous branches, and even occasionally in the capillaries of this system; whilst dilatations occur in the trunks and larger branches. Finally, *varices* are generally attended with pain, which is never the case in mere dilatation. The pain of varix commonly spreads to the neighbouring part, which becomes redder and more swollen than in a healthy state; in dilatation this never occurs. From these circumstances' the author infers, that the peculiar character of *varix* consists, in its being essentially dependent on inflammation of the veins; and without which it cannot occur. The pain and redness, which almost always are present, indicate the existence of inflammation, and to this also must we refer the pulsation, which persons affected with hæmorrhois, often experience in the extremity of the rectum.

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* *Meckle.*

† Practical Essays on the Management of Pregnancy, p. 63. 72.

‡ Transact. of a Society for the Improv. of Med. Knowledge, vol. 3. p. 65.

According to *Chaussier*, these tumours always commence by a slight effusion of blood from a small vessel. These effusions, are either reabsorbed or they are increased,—the tumours increasing, and acquiring by degrees a peculiar organization. In old swellings of this kind, blood is often found in a fine membraneous capsule, in the centre of the tumour, the inner surface of which is smooth, villous, or spongy. No enlarged vessel is found to open into these capsules; the blood passes into them from the mouths of the smallest order of vessels, as may be demonstrated by fine injections. The cellular texture, which enters so largely into the composition of these tumours is, according to the opinion of Dupuytren and Cruveilhier, of precisely the same character, as that which is found in the *corpor: cavarnos, clitoris, and urethra.* Montégre thinks, that the capsule is formed by the dilatation of a capillary vein, and not by rupture and consequent effusion of blood, from one of the smaller vessels.

Wounds and Ulcers of the veins.—Examples of suppuration and ulceration, originating in the substance of the veins, and extending from within outwards are very rare. Morgagni saw the inner surface of the upper part of the *vena cava,* corroded by ulceration.* Portal found the pericardium of a woman filled with blood; the *cava* where it enters the right auricle, was in some parts much thickened, and in others unnaturally thin, with a considerable hole in it close to the auricle, with marks of ulceration on its inner surface.† A case similar to this one is recorded by Lancici.‡ Our author states, that there is in the anatomical museum of the university of Leipzig, a preparation of the abdominal cava, in which there are two holes of the size of a pea. The person from whom it was taken, died suddenly with convulsions and ice-cold extremities; a large coagulum of blood was found in the abdomen. The edges of the openings were tumid and smooth.

Obliteration and obstruction of the veins.—Obliteration of the veins, is almost always the result of inflammation. Baillie§ found the vena cava transformed into an impervious ligamentous substance, from the mouth of the renal veins to the right auricle. Albinus‖ also mentions a case in which the cava, near the iliac veins was entirely obliterated, and he states, that not the least unnatural effects were to be seen in the lower extremities, and in the pelvic viscera. Knape¶ saw a case in which the inferior *vena cava* was impervious, in consequence of thickening and adhesions of its sides, and yet the patient had been free from any symptoms indicative of disease, to within a very short time of his death.

The author quotes a number of similar cases, from various writers, which it would be entirely superfluous to notice in this place. In the second part of this volume, the author treats of the "*Influence of increased venosity upon the functions of other parts of the animal body.*"

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* De sed. et caus. morb. ep. 111 at 37.

† Cours. d'anat. med. T. 3. p. 354.

‡ Opera Varia. T. 1. p. 45.

§ Transact. of a Soc. for Improv. of Med. Knowledge, vol. i. p. 127.

‖ Acad. Annotat. lib. vii. cap. ix.

¶ Hufeland's Journal. Bd. 1813. 1. S. Jan. S. 122.

Diseases of the venous system, says Dr. P., are particularly apt to influence the disposition of the mind, and to induce a general feeling of languor and illness. In hypochondriac, and what are usually called bilious habits, the venous system generally predominates conspicuously over the arterial. The veins are turgid and large; the blood is thick and very black, and moves forward sluggishly. We almost always find persons who are habitually of a melancholic disposition much troubled with hæmorrhoidal affections.

Where the "*venous diathesis*" prevails, there exists almost constantly a sense of general indisposition; with distressing anxiety of feeling, accompanied with a dark and sallow hue of the countenance. The animal passions and appetites, also, are much influenced by the "venous diathesis." The appetite is often entirely absent, but occasionally, also exceedingly ravenous and insatiable; the venereal passion is commonly very strong; and there is generally much indisposition to muscular exertion. Irresolution and want of moral energy is often conspicuously manifested by persons of this habit of body; there is also a fretfulness and peevishness of temper, connected with this state, which renders the patient displeased with himself, and with every thing about him. The symptoms occasionally increase in intensity, until a perfectly melancholic or hypochondriac condition is established.

Have we any evidence, however, that these symptoms are the product of a predominant venous diathesis? The author endeavours to support the affirmative by referring to cases in which symptoms of this kind were manifestly connected with disorder in the venous system. Stahl, Fuchs, Pohl, and many others, assert that hypochondriasis often depends on disease of the *vena porta*; and our author thinks it probable, that hysteria is often the consequence of a *varicose* state of uterine veins, but he does not offer any good reasons for this opinion. The connexion between hypochondriasis and hæmorrhoidal affections, is frequently demonstrated in a clear manner, by the regular alternation of these two diseases; in many instances we find that while the hæmorrhoidal tumours are large and discharge freely, persons of a hypochondriac habit are free from the distressing symptoms of this latter disease; and, on the contrary, when the hæmorrhoides are absent, they are gloomy, apprehensive, distressed and sluggish, both in mind and body. We have already stated, that by the "*venous diathesis*," or "*venosity*," the author understands not only the inordinate development of the whole or a part of the venous system, but also a blood, which possesses the characteristic properties of *venous* blood in too high a degree. That such a state of the blood may sometimes exist, there can be no doubt, and it is equally certain that *venous* blood is totally unfit to sustain the vital properties of the system; that its impressions on the brain, or rather that the want of *arterial* blood in this and other organs, is immediately manifested by insensibility and inaction.

It would not therefore be hypothetical to assume, *a priori*, that a blood which is too highly venous, will produce a general inactivity and torpor of the system, analogous to that which we discover in hypochondriasis: but we cannot with equal propriety deduce from such a super-venous state of the blood the symptoms of hysteria, which, in general, manifest rather too much sensibility and irritability of the system, than too little.

The author, in the next place, considers in detail the influence of the venous diathesis on the functions of the brain, the muscles, the heart, the respiratory organs, the arteries, the secretory organs, the digestive organs, and of the lymphatic system. In relation to the influence of a venous diathesis on the function of nutrition, Dr. P. observes, that there is an especial tendency to obesity, when the blood becomes preternaturally charged with those constituent elements which characterize *venous* blood. When *carbon* and *hydrogen*, are present in a superabundant degree, we should indeed naturally presume that fat will be more rapidly secreted by the nutritive process than in an opposite state of the circulating fluid. And this is, in fact, almost invariably the case in persons in whom the diathesis in question prevails. It is on this account, says our author, that a congestive state of the portal circulation is so commonly connected with large collections of fat in the abdominal viscera and parieties; and that we generally find persons become corpulent about the period of life when the *venous* begins to predominate over the *arterial* system of vessels. It would appear that the inordinate secretion of fat is a means which nature employs to free the blood from the excessive quantity of hydrogen and carbon which constitute "increased venosity," and which in a perfectly regular performance of all the functions, are eliminated through the various emunctories designed for this purpose. The third and concluding section of this work is devoted to the consideration of the "venous constitution; with the history of some complicated diseases in which the venous system was prominently concerned." According to the author there are two varieties of venous constitution: the *atrabilious* and the *phlegmatic.* In the atrabilious venous constitution, *carbon* predominates in the blood; and in the *phlegmatic* hydrogen is superabundant. In the latter constitution, namely, the *phlegmatic venous,* there is an especial tendency to obesity; the countenance is pallid and tumid; the mucous secretions are generally copious: and respiration is slow, rather difficult, but not feeble. There is no feeling of general indisposition, or want of mental tranquillity essentially connected with this constitution. Persons of this habit, are in general, not particularly predisposed to disease. They are, however, more liable to local venous congestion, terminating in athritic affections, hæmorrhoides, mucous discharges, &c. The diseases of such persons are commonly of the venous kind. A prominent character of this constitution is, that the "increased venosity," is most readily, speedily, and safely removed by copious secretions of mucus and fat.

The *atrabilious venous* constitution, is connected with the melancholic or melancholic-choleric temperament of the older writers. This constitution is manifested by a yellow, greenish, dark, greasy aspect of the countenance; the body is seldom fat, often lean, but generally well nourished. The sensibility is increased; the muscular power depressed and languid; the arterial system is irritable, with a large, full pulse, and the disposition to inflammation considerable. Persons of this constitution are particularly liable to hepatic affections.

The author, in the next place, proceeds to treat of the various diseases which are more particularly incidental to persons of the atribilious and phlegmatic venous constitutions. These are, hypochondriasis, hysteria, gout, gastric and mucous fevers; hæmorrhoidal affections, scurvy, putrid fever, yellow fever, typhus. In the fourth and concluding chapter, the author speaks of the remediate treatment of the diseases of the venous system. Upon this subject, however, he is less explicit and interesting, than we could wish him to have been. His sole object appears to have been to give a full and connected view of the pathological side of his subject, and in this he has, according to our judgment, succeeded very well.

E.

ART. III.—*Typhus Syncopalis, Sinking Typhus, or the Spotted Fever of New England, as it appeared in the Epidemic of* 1823, *in Middletown, Connecticut.* By THOMAS MINER, M. D.

OUR readers will recollect that we had occasion, not long since, to notice a work entitled, "Essays on Fevers and other Medical Subjects," by Drs. Miner and Tully. We concurred with the great majority of our medical brethren, in severe and unqualified disapprobation of the contumelious manner in which their medical opinions were thrown in the faces of the profession.

We will not say that the severe strictures, which the character of the work elicited, have chastised the author of the present pamphlet into a more courteous and conciliatory address; we will presume that the native good sense, which he certainly possesses, aided by mature reflection, has subdued his invidious feeling, and taught him, that difference of opinion in matters which are notoriously and proverbially unsettled, does in neither party necessarily indicate weakness of understanding or malice of heart. We presume, too, that he has become practically convinced of the impolicy of insulting the tribunal, by the decision of which alone his principles are to stand or fall. The character of the pamphlet which we are to examine, we regard as a silent apology for that of the Essays which preceded it. We regret that the author did not earlier assume and adhere to the motto which he has adopted: "For my own part I am contented to write faithfully what I have observed, leaving every body afterwards to follow his own way at his peril." A faithful observance of this principle has enabled our author to furnish us with a well condensed body of facts, in relation to one of the most interesting and characteristic diseases of our climate. If the author's observations are correct, which can be determined only by the observations of others, these thirty-two pages of practical matter are calculated to be more valuable to the profession than as many volumes of closet speculations on the occult causes and nature of disease.

For our own parts we frankly acknowledge that we have not had that ample opportunity to scrutinize the phenomena of this particular epidemic, which would qualify us to act as an umpire in relation to what is questionable in its character and treatment. Even if we deemed ourselves adequate, however, the pamphlet is so completely a statement of facts, as almost to preclude critical examination. Our object in introducing it, is to make such copious extracts, of what we deem its most important parts, as may give our readers an opportunity to form their own opinions with regard to its character and value; and also to enrich the pages of our Review, as much as possible, with matters of fact. At the same time we claim the privilege, wherever general pathological remarks may occur, to interpose our own observations.

We agree perfectly with our author in regard to the existence of a distinct disease, or class of diseases, as further investigation may determine, which is strongly characterized by the symptoms that he describes, and to which he very pertinently applies the name of *syncopalis.* We surely have ample evidence of the existence of a subtle morbific cause or causes, the immediate tendency of which is to extinguish the very elements of life. It would appear that its deadly influence was exerted universally on the system to paralyze at once the vital principles of irritability and contractility, rendering each organ insensible to its ordinary and appropriate stimuli. This malign influence, it is obvious, can only be met by remedies which antithetically correspond to the presumed nature of the cause. These, surely, are the most prompt and diffusible stimuli, whose vivifying influence pervades every part of the system and meets the enemy with a counter impulse.

The existence of a disease of this nature, and the propriety of employing this class of remedies, has evidently been too reluctantly admitted by many members of the profession. This has probably been occasioned by their not having had opportunities to observe the phenomena of this disease, or by attributing them, when seen, to very different causes known to produce *indirectly* a somewhat similar train of symptoms. Hence they have regarded the pathology of this disease as a kind of anomaly in medicine. But on the other hand it is evident, that those who have developed the character of this disease, have, as is very natural to such as advance new doctrines, perniciously carried their principles beyond the natural limits assigned to them, and have too often presumed similar symptoms to arise from the same immediate and remote causes. We are willing that they should cover as great a superficies with their doctrine, as its own dimensions will allow, but we cannot suffer them after the manner of Queen Dido, to cut it into strips and thus tb circumvent the whole system of pathology. We have no doubt that in many cases of typhus, and of other diseases, which our author regards as specifically different from that under consideration, cerebral or pulmonary congestion, or an engorgement of the great vessels of the heart, may produce prostration of strength, small pulse, and many other symptoms in common with syncopalis. We have the evidence of our own senses that gastric and intestinal irritation also do sometimes produce a remarkable train of subsidentia.

In a case of measles, which is fresh in our minds, we recollect to have witnessed a most alarming prostration of the vital powers, which was not at all relieved by cordial remedies, till we had thoroughly purged the stomach and bowels, with ipecac. and calomel, of a great quantity of irritating cordes, when the whole expression of the disease was at once changed. There is not in medicine a more important desideratum, than a correct diagnosis between these two classes of diseases, nor indeed is there any thing, which in theory requires more nicety of discrimination, or in practice more promptitude and decision. It is obvious that, in those cases of sinking typhus, where the cause operates directly to depress the powers of life, bleeding, with a view to relieve an oppressed pulse, or copious purging under the idea of intestinal irritation, in the most strongly marked cases and before reaction has taken place, would be almost necessarily fatal; while in those cases in which the latter causes prevail, the continued use of stimuli and irritants, without removing the offending cause, would be little less injurious.

We have an idea that the apparent paradox of increasing a feeble pulse by bleeding, which does actually occur in some cases, has great attractions for some practitioners, because it it a mystery beyond the comprehension of the vulgar. Their professional sagacity, in this matter, however, too often leaves common sense behind it. If there is a more mischievous illusion in medicine than this, it is that which deceives the practitioner into the use of tonics and stimulants, in protracted cases, where the degree of action is equal to or above the natural standard, from apprehension of subsequent debility, thus wearing out that excitability which nature would have held in reserve against greater exigencies.

"Between the last of March and the last of December, 1823, two of the physicians* had the care of more than a hundred and seventy severe cases of fever, in Middletown, Connecticut, which went through their course, and required close and vigilant attendance. They also had the charge of more than a hundred and eighty other cases of the same sort, which, either from original mildness, or prompt treatment, proved to be comparatively slight. The latter class of patients, however, were so much indisposed, as to be unable to attend to their ordinary business, for a period of one or two weeks; though unlike the former, they were not entirely confined to their beds for any considerable time. Out of these cases, being in the whole about three hundred and sixty, twelve died; viz. six adults, and six children. One half of the mortality happened in November. In the succeeding month, the epidemic terminated. Persons of all ages, from one year old to seventy, and of both sexes, were the subjects of the disease. It is perhaps needless to remark, that the following statement applies more particularly to the severer cases, unless the more moderate are distinctly mentioned.

"There were two varieties of attack, the sudden, and the insidious. The most sudden attacks were the soonest relieved, provided the patients had prompt and appropriate treatment; and under such circumstances, the disease rarely exceeded five or seven days. In some of the severest cases, the disease arrived at its height on the third day, and under careful management, the patient appeared subsequently to be free from danger. Not one, this year, that was suddenly attacked, died; the recovery, in most instances, being the evident consequence of the promptness and decision of the treatment, and of the necessity which both patients and attendants felt, of following prescriptions scrupulously.

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* "Dr. Edward S. Cone and the author. The patients were principally Dr. Cone's, but were mostly visited by the author in consultation.

"In the insidious cases, the subjects of the disease were affected with the symptoms about to be described, in a mild degree, for a greater or less length of time, and many seemed to labour under a kind of infatuation concerning the malady and existing danger, and were almost invariably inclined, for several days, to ascribe their indisposition to some other cause, than the prevailing epidemic; and if, at the instigation of friends, a physician was called, they could not be induced, without the greatest difficulty, to follow any regular plan of treatment, till violent symptoms occurred, sometimes as early as the third or fifth day, or more commonly, as late as the seventh. A few insidious cases continued two or three weeks, before there was apparent danger.

"The whole number of deaths, this year, happened among the set of insidious cases. One of the adults died on the third day; one, on the fifth; one, on the ninth; one, at the end of the second week; one, at the end of the third week; and one, on the fifth week. Besides, in one of these fatal cases, the disease was complicated, at first, with dysentery; in one, with gout; in one, with a chronic hepatic affection; and two had hæmorrhage from the lungs. The other did not substantially vary from the common insidious cases. Some of the children died at the end of a week; the others, at the end of a fortnight.

"A few of the cases were complicated with dysentery; some, with colic; two or three, with cholera; some, with cynanche; some, with cough of pneumonia; two or three, with rheumatism; one, with gout; a few, with severe pain, and passive inflammation of some of the extremities. The great majority, however, had no apparent local affection, except of the brain, and of the parts that more directly sympathise with that organ.

"During the prevalence of this epidemic, chronic diseases nearly disappeared, and when they did exist, their acute paroxysms were invariably blended with the prevailing epidemic. For eight or nine months, it was difficult to find a case of acute disease, that did not partake of the epidemic constitution, under whatever head it might be nosologically classed. Not more than two or three cases were, this season, attended with petecchiæ. In one of these, they were very dark and prominent. A marbled skin, efflorescences, and eruptions, appeared in many instances.

"In nearly every instance, whether severe or moderate, the disease began with more or less pain in the head, especially about the forehead. Vertigo was also a symptom almost universal. In some, a sudden faintness, dizziness, or sense of extreme exhaustion, so that the patient could neither sit nor stand upright, was the first symptom. In others, the attack resembled a severe concussion of the brain, or a sudden stroke of palsy or apoplexy. Indeed, every thing seemed to show that the brain and nervous system were the primary seat of the disease.

" In almost every case, the skin was preternaturally cool, for several of the first days, and subsequently, in temperature, *it never exceeded the standard of health*, in more than than three or four cases. Even after it had been warmed by internal and external heat, in conjunction with stimulants, it was ever liable to become *partially* cold, as about the thighs, knees, legs, arms, hands and feet. In the course of the disease, more especially in the worst cases, it was almost always so much benumbed, as to be insensible to an ordinary pinch or scratch, and while in this state, incapable of being affected by common sinapisms and blisters. This numbness was sometimes most prominent in one side, or even in one leg or arm. In the latter stage, however, there sometimes occurred periods of extreme susceptibility to the impression of rubefacients and epispastics; but as a general rule, external applications, of ordinary strength, would produce very little effect, till something like reaction had been effected. Complete agues or rigors, this year, were very rare in any stage of the disease. Commonly, through the whole course of the disease, the surface, though not dry or husky, was seldom much inclined to spontaneous moisture. In a few instances, however, there was a morbid, drenching perspiration. Sometimes, though rarely, the patient would complain of a general sensation of heat, though, to the feel of the attendants, he would be actually cold. Is not the heat, which has been often said to occur in some epidemics of this disease, either a transient flush, or the *calor mordax*, the stinging sensation merely, and not the actual augmentation of thermometrical temperature? If increased heat, and increased frequency of the pulse, are a part of the definition of fever, a great majority of the cases had no fever at all, but were merely an acute neurosis. At this day, however, it is well known that these symptoms are often absent in irregular pyrexia.

" The countenance, in most of the severe cases, had a kind of leaden hue, with marks of anguish. In some, there were patches of a bright flush, intermingled with other patches that were preternaturally pale. In a few cases, the pupils of the eyes were contracted, and in a few, dilated. In some cases, the organs of sight and hearing were irritable in the extreme; in others, they were equally torpid.

"There were two prominent varieties of the tongue, the contracted and pointed, and the dilated and flabby. The fur of the tongue assumed every possible deviation from health, and was of every conceivable variety, except that it never had the appearance which is usually found in synocha. In the course of the disease, *red tongue* was rather more frequent than any other. Two uncommon varieties of fur sometimes occurred, one of which was a greenish slime, and the other a mucus, varying in appearance, from moist brown sugar, to light coloured melasses. The former was rare; the latter, more common. Most of these varieties of tongue were liable to sudden changes in the same patient. In some of the protracted cases, there were apthæ. A black tongue seldom appeared, and two or three instances of it only were noticed. On the whole, the state of the tongue was of very little service in diagnosis, or prognosis. In general, there was little or no thirst; but sometimes it was urgent. In such cases, it was generally aggravated by cold water, and palliated or removed by a persevering use of aromatics or alcohol.

"The stomach, on the one hand, was usually as torpid and inactive as a leathern bag, so that in many instances, the patient would choose scalding hot liquids; or on the other, it was irritable in the extreme. The change from one to the other of these extremes, was generally sudden, and occasioned by slight causes, or took place without any assignable cause. In the majority of the severe cases of sudden attack, unless the violence of the disease was immediately subdued by very energetic practice, torpor prevailed for the first two days; but for the succeeding three or five, the irritability would be so extreme, that without the nicest and most careful management, vomiting or retching would be incessant. The matter ejected, generally consisted of little more than the drink, or secreted mucus. In a few instances, it was greenish; in a very few, dark coloured. Though in some instances this vomiting was very troublesome, yet there was never any bile evacuated, except in two or three patients that had long laboured under a chronic hepatic disease, or except as the consequence of an ill-timed emetic or cathartic. Indeed, the vomiting or nausea, in this disease, seemed ordinarily to be entirely symptomatic of an affection of the brain, or was obviously the effect of an emetic or cathartic, the sympathies being the reverse of sick-head-ache. This was evinced by its being excited by raising or moving the head, or by placing the patient in an erect posture, and relieved, by a recumbent position; and especially, by blisters to the forehead, temples, and more particularly, to the vertex. Blisters to the region of the stomach alone, though of some service, produced much less effect in relieving this symptom.

"With the exception of the few cases that commenced with diarrhœa, cholera, or dysentery, the bowels were naturally torpid. Ischury, from mere torpor of the bladder, was much more common, than in other low typhoid diseases. There was a profuse discharge of urine in a few cases. In general, in common with ordinary low typhus of the *nervous type*, there was nothing peculiar in the appearance of this excretion. Indeed, the excretions were never more offensive, and usually much less so, through the whole course of the disease, than in health; and the alimentary canal was not disturbed by any thing which it contained *naturally*. The eructations and ejections of air had no peculiar, disagreeable odour, there was no fetor of the breath, and in all stages, as well at the bed-side of the dying, as at the access of the disease, *there was no febrile smell.*

"The condition of the brain, in this disease was usually very similar to that state which is produced by exposure to carbonic-acid-gas, or which is occasioned by excessive doses of some preparations of lead, or of certain essential oils, or of active and pure narcotics. In many cases it resembled concussion, or apoplexy, or palsy. In all the severe, and in a majority of the mild cases, there was from the very access, before a particle of medicine had been taken, *a peculiar deficiency of vital energy in the brain, and the whole nervous system,* so that raising the patient into an erect posture, would generally produce the same sort of vertigo, anxiety at the stomach, acceleration and irregularity of the pulse, nausea, and even fainting, which result from a similar position after a great loss of blood. In almost every instance, the patient was much more comfortable when the head was *low*; and much inconvenience, and even danger, was almost invariably occasioned from any other than a horizontal posture.

"The mind was more or less affected in every severe case. In the majority of such cases, after the patient was induced to apply for medical advice, there was a morbid fear, entirely independent of any existing urgency or danger of symptoms, and of any information respecting sickness and death in the vicinity. The public were not panic-struck, as the deaths were so few, as to cause very little alarm. Fear, therefore, was rarely a predisposing or exciting cause in this town, though it evidently was, in some of the adjoining. In some cases, there was a morbid clearness of intellect, attended with incessant loquacity, or there was too great watchfulness, and extreme restlessness; both of which states were always, sooner or later, followed by delirium or coma. Nearly every case of delirium alternated with coma, but every case of coma was not attended with delirium. In some cases, the delirium resembled intoxication; in many, hysteria; and in others, it was of the low muttering kind, such as is common in ordinary low fevers. In some few cases, there was no other delirium than what was manifested by a false estimate of the disease, the patient, when in the greatest danger, instead of showing any signs of fear or apprehension, insisting that he was but slightly sick. In most cases which received early and judicious medication, delirium did not occur to any extent.

"Except where there are convulsions, or, in a very few instances, where something like maniacal exertion appears, or when the fever counterfeits delirium-tremens, the affection of the brain in this disease (unlike many head-affections in pneumonia-typhodes, and common typhus,) rarely produces any increased muscular strength; but on the contrary, it usually occasions great languor, and inability for muscular exertion, which is more especially manifested when the patient is in an erect posture. As has been before observed, this debility was a kind of paralysis, and appeared to arise from a partial extinction of the vital principle, more resembling the effect of excessive doses of the active and pure narcotics, or of a sudden and violent concussion of the brain, than the exhaustion of the latter stages of common fever. The exhaustion or deficiency of *vital energy* in both cases, appears to be the same, and the same proportion of the living principle is extinguished; only, at the end of protracted fevers, there is a great waste of the solids and fluids of the body, which must be repaired before much muscular strength is acquired.

"In many of the severe cases, the patient on going to sleep, would fall into a state resembling incubus, with difficult or partially suspended respiration, which would require his being awaked as often as once every five minutes; and some could not be allowed to sleep longer at one time for several days, without their spontaneously waking in the most excruciating fright and distress, and finding themselves greatly exhausted.

"During the progress of the epidemic, every variety of pulse occurred, except the *strong* and *hard*, and this often in the same patient. In many of the mild cases, and in most of the others, till the period of fatal sinking, it was rarely so frequent as in health; but towards the close of life, in several of the fatal cases, it was a hundred and twenty or thirty, and occasionally, a hundred and sixty in a minute. In less than twelve hours, it would sometimes vary in frequency from forty, to a hundred and thirty. In one instance, it was as slow as twenty-seven beats in a minute, and in six or eight hours varied to a hundred and thirty. This patient recovered so rapidly, that he was able to ride out in a week from his first attack. After the disease was fairly formed, whether it was moderate or severe, an erect or sitting posture would almost uniformly accelerate the pulse forty or fifty beats in a minute, and sometimes double its frequency, besides producing considerable irregularity. In a very few cases, the pulse was a hundred and twenty at the very first attack. The pulse alone, (as is the case with the tongue,) is a very deceptive guide in this fever. At various times in the course of this disease, and even in the dying, it would occasionally give a delusive feel of fulness and force, that often deceived the very best judges respecting the danger, unless attention was particularly directed to other symptoms. In such circumstances, in former epidemics, bleeding has been seriously proposed by a counsellor, while the attending physician knew the patient to be actually *in articulo mortis.* In other epidemics, in which this disease was mistaken for active inflammation of the brain, or for apoplexy, when the patient has been bled, death has ensued before the ligature could be taken from the arm. In most of the worst cases, the circulation was daily so languid by turns, that the extremities had a livid appearance, and were often nearly pulseless. One patient at least recovered, that was without pulse at the wrist for several hours. Some of the fatal cases were attended with a very distressing palpitation of the heart.

"A very prominent symptom, which occurred in some degree in almost every instance, even of the mild cases, and probably without an exception in all the severe, and happened in every stage, sometimes constituting the first access of the disease, consisted of paroxysms of *subsidentia*, or a deathlike *sinking* sensation in the epigastrium, that was described, sometimes as extreme distress, sometimes as a painful sense of vacuity and faintness, sometimes as trembling or fluttering, sometimes as real pain and anguish, and at others, was declared to be utterly indescribable. During the existence of these paroxysms, the coolness and numbness of the skin, the lividness of the extremities, the feebleness of the pulse, and the indications of distress in the countenance, were much augmented. Sometimes these paroxysms of sinking, were attended with palpitation, and often with spasms; though spasms, tremors and subsultus were not uncommon in every stage. In the mild cases, these paroxysms of sinking occurred *regularly* in the morning; but in the severest they were not confined to any particular hour of the day. Singultus was extremely rare, as also was indurated, inflated, or tympanitic abdomen.

"In many of those cases which were neglected or treated with evacuants, or in which the early symptoms were not decisively and fully met and subdued by appropriate remedies, a peculiar and somewhat different, and usually irreparable sinking and exhaustion occurred, *after a critical effort,* or in lieu of a crisis, on the third, fifth, or more commonly, on the seventh day. In a few cases, it did not occur till the end of the second or third week. Under such circumstances, in addition to the sinking in common with other cases, the respiration was interrupted and peculiar, and much resembled that of the dying, or rather that of animals (as it is described) after a division of the *par vagum*, the inspirations occurring only at intervals of several seconds, and being usually long and full, while the expirations were so short, that the breath was parted with instantaneously. This *critical* sinking, in combination with morbid respiration, was often the first warning of danger to the patients and attendants, in the insidious cases, and it was almost invariably irremediable; for, although every symptom could be met for a time, to the full extent, and although the most decided operative effects of medicine could be produced, and life often be prolonged for days, yet the weight of the disease could rarely be lessened, and, in one of the succeeding critical efforts, the same symptoms would almost inevitably prove fatal. In other fatal cases, the disease terminated in a deadly coma. Paroxysms of coma were periodical in some instances, as were those of sinking in others. The former description of sinking and anxiety, which was principally referred to the epigastrium, in distinction from the *critical*, may be termed *ordinary* sinking. It was usually relieved when taken in season, and treated with energy.

"Hæmorrhages were rare in this disease; but when they did occur, they were mostly fatal. One case of a child which died on the seventh day, was attended with symptoms of chorea. One or two cases were seen that resembled delirium-tremens. Many had most of the usual symptoms of hydrocephalus-internus. Several retained their habitual relish for strong tea, snuff, and tobacco, through the whole course of the disease. Milk-porridge, or broth, was the food that generally sat easiest on the stomach. In a few cases, there was a strong disposition to eat heartily of solid animal food. In those in which this appetite was moderately indulged, it seemed to digest properly; at any rate it produced no sort of inconvenience.

"In opposition to ordinary fevers, in this disease the symptoms were generally much more urgent and severe in the morning, than in the afternoon or evening; that is, the patient was most dangerous during the remission. The reaction of the exacerbation in the afternoon, though it did not reach the standard of health, and could not even be considered as reaction at all in common fevers, made the patient comparatively easy. When there was a resolution of the disease at its outset, a relapse would infallibly supervene suddenly, upon any considerable irregularity of diet, exercise, &c. within the first week; but when the disease had once run its course, there were very few relapses during convalescence. There were several repeated attacks, after the most perfect recovery; and several of the patients had had the disease the preceding year. Critical periods were most prominently observed. When a case was protracted longer than five or seven days, as in the last stage of almost every acute fever, the disease appeared, though still more liable to severe and fatal sinking at the critical periods, not very unlike common low typhus, in which delirium, tremors, subsultus, coma and sinking occur; and was not easily distinguished from it, especially by counsellors, who could not witness its whole course.

"The treatment, as respects *degree*, was almost as various as the number of cases; but it was alike in *kind*, in all; and there was abundant evidence, of the necessity of *avoiding every thing that might waste the vital powers.* This was more especially the fact, with respect to evacuations, which, if copious, *invariably* rendered the mild cases severe, and the severe ones, fatal. Probably more than three-fourths of the fatal cases were the consequence of spontaneous or factitious purging or vomiting. Emetics did not answer at all, as the mildest would almost inevitably produce incessant vomiting, which, if not controlled by very large doses of opium, or by great quantities of laudanum by enema, would end in exhaustion and death. More than three quarters of all the cases, however, whether severe or moderate, were at first very slightly purged with calomel, so guarded as not to operate before twelve or eighteen hours. It was necessary to manage laxatives with the greatest caution, and very generally, to conjoin them with opium. Calomel, accompanied with a diaphoretic regimen, if retained on the stomach twelve hours without operating by the bowels, in the light cases, would lessen, and often remove all the morbid action; yet, much more caution was necessary in this process, to ensure a resolution, than in common typhus. Nevertheless, more than two copious dejections never took place, without the most obvious injury. It is as safe to leave a wounded artery to nature, as in this disease, to administer a cathartic, without directing its free operation to be *instantly* checked by opium. Those patients, who of their own accord attempted, at the outset of the disease to purge themselves, even with castor-oil, provided it operated more than once or twice, were commonly found by the physician in little better than a dying state, and always required the most assiduous exertions for their recovery. Several that adopted this plan were seen, who could never be raised, and obviously sunk down and died, in consequence of it. One patient was seen, that sunk irretrievably, by a single operation of an enema.* In about a fourth of those patients who had the disease in its severest form, a judicious physician would no more think, at first, of vomiting or purging, than of employing those processes to mitigate the struggles of the dying. In several of the *worst* cases, *cathartics could not be made to operate,* while the patient was in the lowest state, and there was not the least inconvenience, from having nothing pass the bowels for a week; and in some of these, when the patient was considerably better, the bowels spontaneously resumed their natural action. The proper time for evacuating the bowels in the lowest cases, was indicated by tenderness of the abdomen, uneasiness, or slight pain, which showed that the torpor of the intestines had ceased. Under these circumstances, the discharges were never indurated, but were always perfectly natural. In many cases, a single enema, or a small quantity of magnesia, or rhubarb, or an aloetic pill, was necessary as an eccoprotic, or at farthest, as a laxative once in two or three days. It is to be observed, that the opium should not be abstracted on account of the laxative or any other article, but only as the other symptoms admit. On the whole, the best way of evacuating the bowels, appeared to be produced, by giving daily about a dram of magnesia, and if necessary, assisting it every other day by an enema.

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* When patients are mentioned *as seen,* it is meant in consultation, and they are not included in the three hundred and sixty cases, the immediate subjects of this sketch.

" The opinion, that in this disease, and more especially in any of the distinctly marked cases, purging would increase the susceptibility to the impression of stimulants, was *utterly unfounded.* The morbid action could not be changed, in the severest cases, by evacuents and alteratives, it could only be controlled by exciting and supporting the vital powers by stimulants, and such articles as appear to have *an immediate action on the brain and nervous system.*

" If by vigorous treatment, the system could be raised in a day or two, to a mercurial, or purging, or vomiting point, the victory might be considered as already gained, and there was very seldom any need of either of the processes of vomiting, purging, or ptyalism afterwards. As a general rule in this epidemic, it might be affirmed of cathartics, with the utmost certainty, *juvant per casum, nocent per se.* In every instance, the mildest forms of the disease were rendered severe and unmanageable, by *free* purging or vomiting. If they did not sink, which was usually the fact, they became *factitious*-bilious fevers, which were obstinate and unmanageable. In a few *bad* cases, in which a slight mercurial action was excited, it was of no sort of service; and in such cases. if irritable, strangury from cantharides only distressed the patient.

Opium was the most important remedy in the severe form of this disease, and was, in such cases, *regularly* administered from the very first visit. A few cases imperiously required half an ounce of the tincture in an hour, or half a dram in substance, in the course of twelve hours, before the urgent symptoms could be controlled; and even some cases required a dram in the same time. All these patients recovered. In nearly every fatal case of this year, there were circumstances to prevent a free use of medicine. *The whole of those patients, whose symptoms were promptly met with opium, invariably recovered.* Opium *enough,* assisted by external applications, would command every peculiar symptom, with as much certainty, as any effect can be promised from medicine, except the extreme sinking, after a critical effort, in a neglected, or ill-managed case; and even in this forlorn state, it always mitigated much of the anxiety and distress, and prolonged life. Many other articles, however, were very useful in the course of the disease.

"Alcohol was highly beneficial in some cases, and required to be employed freely in many, but it seemed not to be equally adapted to all, and on the whole, was of much less importance than opium. Wine seemed totally unfit for the severer cases. Lytta and capsicum internally, were very serviceable in the torpid cases, but were entirely unmanageable, and greatly increased the irritability of most of those which were previously irritable. Arsenic, (Fowler's Mineral Solution,) was highly serviceable when the head was very much affected, and the stomach at the same time torpid. In some irritable cases it answered well, but it was necessary to adjust the dose very accurately, in order to have its full effect on the one hand, and not offend the stomach on the other. In these cases, however, it agreed better than any thing else, except opium, or perhaps alcohol and aromatics. Delirium resembling mania, was occasionally relieved by tincture of stramonium, combined with tincture of opium. Camphor and ammonia answered a good purpose in the more moderate cases, but were worse than nothing in most of the severe. Ether was of no service for permanent support, but was occasionally very useful during the sinking paroxysms. The same was the fact with peppermint, and other essential oils. Oil of turpentine was not used internally. Cinchona, and the other *vegetable bitters and tonics*, did not the least good in the *severe* cases. They were too slow in their action to produce a perceptible effect, till after a crisis, or in the protracted stage of such cases, as assumed the form of common typhus. After convalescence commenced, they were often useful to assist in retaining the ground which had been gained, and to accelerate recovery. In these instances, if the stomach was irritable, sulphate of quinine was preferable to any other preparation of cinchona.

"In all the varieties of this disease, internal medicines were greatly assisted by external applications, which were adjuvants that could never, with safety, be omitted. When it was practicable, the early use of the *hot-bath* was of great service, and it was much to be regretted, that it could not be oftener employed in the first stage. Warm or tepid bathing was rather injurious. The water should be so hot, as to make as strong an impression as can be borne, without danger of scalding. When strong, and at the same time quick rubefacients were required, bottles of hot water, heated bricks or wood, hot spirits, mustard, liquor of ammonia, capsicum, and oil of turpentine, were important agents. Epispastics of cantharides would produce no effect in many cases, till the skin had been first excited in this way; but as soon as the susceptibility of the patient was raised, by internal and external means, to the blistering point, the freest application and repetition of them, was attended with the most obvious beneficial effects. They were more especially useful to the *shaved vertex*, forehead, temples, spine, epigastrium and extremities. In every case, (the very mildest are not with safety excepted,) the forehead, and in the severe, the vertex, should be immediately blistered. Shaving the head, and blistering it *early*, is more serviceable than any other external application. Torpor of the bladder almost invariably yielded to sinapisms, or more especially, to blisters on the inside of the thighs. So sensible were those patients who had their reason, of the beneficial effect of blisters, that they frequently begged to have them repeated. To one patient, more than twenty blisters, and to another, more than thirty were applied during the course of this disease, and evidently with the greatest advantage. *Oil of turpentine, warmed, and confined to prevent evaporation, was the speediest epispastic*, and was of much benefit in coma. In a very few cases, there supervened such a peculiar irritation in the latter stages, that blisters required to be repeated with caution, on account of strangury, as this symptom, in irritable cases, sometimes increased the morbid action. It always lessened it, in cases of torpor. In no other disease is it so essential to distinguish counteracting, from coinciding agents. But after all, in the severest forms of the disease, *opium*, *alcohol*, *arsenic*, *aromatics*, *and external applications*, with no other medication, might be depended upon.

"In the mildest cases, after *cautious* purging with calomel, the prescriptions were almost negative; such as to avoid vegetable acids, cold water, muscular exertion, *an erect position*, for any considerable length of time, much purging, and various other hurtful measures. Numbers of cases might be stated, in which the patients, while labouring under an apparently moderate disease, from a false idea that they should gain strength by sitting up, have produced the most dangerous paroxysms of vertigo and sinking, some of which have been followed by death. Many of the severest cases did not admit of being moved from their beds for several days; since the slightest motion, or change of position, was liable to produce a severe paroxysm of sinking, and increase the exhaustion to such a degree, as to require hours to regain the ordinary strength. Some slight cases might be trusted to aromatic, bitter infusions, alone; others, to camphor and ammonia.

In several of these, no calomel, or opium, or alcohol, or any active medicine, was needed or employed, provided all hurtful measures were studiously avoided. In many, a blister to the forehead, serpentaria, camphor and ammonia, compound tincture of cinchona, and opium in very small quantities, were all that were required.

" Profuse sweating from external heat was useless in the mild, and inefficient, or injurious in the worst form of the disease, unless employed at the very access; and in this stage, it could rarely be used with convenience. By the time a physician is called, it is generally too late for sweating to be of much service; though, when employed very early in cases of *sudden attack*, it is sometimes capable of breaking up the disease, especially in the torpid variety. Under such circumstances, it ought generally to be tried. The duration, severity, and mortality of this disease, depend more than any other, upon the early management.

" On the whole, it must be repeated, the epidemic afforded the most decisive evidence, in favour of the efficacy of a free use of opium, when employed in season, for the removal of coma, and other atonic affections of the brain. When the early treatment was efficient, there was sometimes a resolution in twenty-four hours, or the disease rarely lasted longer than five or seven days; but when the practice was so timid and inert, as only partially to meet the symptoms, if the patient did not immediately sink it was generally protracted somewhat in the form of common typhus, fourteen, or twenty-one days, and in some few cases, four or five weeks. [For other particulars concerning principles and practice, see ESSAYS ON FEVERS, &c. especially those parts of the work which treat of the *irregular* varieties.]

" This epidemic, very obviously, was not common typhus, as that term is intended to include the nervous and putrid fevers of the older authors. What then was it? It has been questioned whether it was nosologically the same as the Hartford Spotted-Fever of 1809; and by those who did not witness the disease, even whether that epidemic differed essentially from common typhus, or nervous-fever.—The peculiar and extreme deficiency of vital energy in the brain and nervous system, from the very access of the disease, *without any appreciable reaction during the whole course*—the early urgency of the symptoms—the constant liability to coldness of the extremities, and numbness of the skin—its degree of insusceptibility to the action of strong rubefacients and blisters—the peculiar distressing and death-like SINKING in the epigastrium—the craving of hot liquids—the alternation of extreme torpor and excessive irritability of the stomach—the great liability to sudden and irremediable sinking—the respiration resembling that of animals in which the *par vagum* has been divided—the immediate exhaustion produced by an erect position—the delirium resembling intoxication, (when neither alcohol, opium, nor any other medicine had been used,)—the extreme variableness and irregularity of the pulse, particularly its occasional deceptive fulness and force, when the patient is in the most alarming state of exhaustion—the very rapid progress of the disease—the impunity, at least, with which the most extraordinary doses of opium were borne, (which must be acknowledged by all, from the unparalleled success of the practice, whatever may be realized of its necessity and advantage by those who did not watch the whole progress of the cases,) the injurious effects of *free* evacuations, whether spontaneous or factitious—the general inefficacy of all medication to gain a hair's breadth upon the disease, when, from neglect or bad management, the patient had once sunk down at a critical period, though perhaps the same degree of exhaustion might not have been very alarming at the crisis of any other ordinary fever, and though individual symptoms might be capable of material palliation—the absence of febrile smell, and indeed, of any uncommon fetor of the excretions—all mark the identity of the disease with the Hartford Spotted-Fever of 1809, and evince its diversity from common typhus or nervous-fever. From these considerations, it is believed, no one will hesitate to admit that this disease, at least as respects the severest and most sudden cases, was genuine spotted fever, and that it was essentially different from common typhus. Indeed, the two diseases differ so much, especially during several of the first days, that the best treatment of common nervous fever, would prove fatal in every severe case of spotted fever. With the utmost confidence it is asserted, that by the experienced, they might be always discriminated, and therefore should never, at this late day, be mistaken, or confounded together. It is true, that in a great majority of the cases of this year, the disease was less violent, and more manageable than the Spotted Fever of 1809, and indeed, than it was this same season in several adjoining towns. The only difference appears to be that the mild and insidious cases, were in a much greater proportion, this year, than formerly. The cases of sudden attack, were identically the same as those of 1809, and *all the others* were clearly varieties of the same epidemic. But this is a point of difference which existed to an equal degree between several of the different cases of both epidemics. Why may there not be prominent varieties of spotted fever, as well as of common typhus, yellow-fever, cynanche-maligna, pneumonia-typhodes, dysentery, &c.?

" This disease, however, was peculiarly distinguished from every other, by the *early* paroxysms of sinking that attended it, by the entire absence of the *stage* of reaction, which is so essential to ordinary fevers, and by the great effect which opium had in mitigating all the dangerous symptoms of *every stage*, but more especially, irritability, delirium and coma. In every instance, except after the fatal sinking of a critical period, provided a sufficient quantity could be swallowed, or received and retained by enema, (which latter, in some few cases, was the best way of administering it,) it seemed to be invariably capable of obviating the symptoms in question.

" In common typhus, whether of the nervous or putrid type, even after a critical sinking, we can, in general, not only call the remaining excitability into action, but as is evident, actually produce a new secretion of vital power. But this can rarely be done, after this critical sinking of the *worst* cases of spotted fever. If therefore, we have not produced an early change, or begun thoroughly with a much more energetic course, than similar symptoms in ordinary typhus would demand, or even justify, our prospect of success is small. It is the sudden attacks of the severest cases, which rouse all our energy, and usually make us even more successful in this disease, than in ordinary fevers.

" To conclude,--Typhus syncopalis or the spotted fever, when neglected or injudiciously managed, is among the most deadly maladies which a mysterious Providence permits to scourge the human race. When taken in season, and treated with decision and judgment, few diseases yield with so much certainty to a proper course of medication.

Our author and our readers will, perhaps, think this an odd way of *extracting*, which swallows up almost the whole book; we trust, however, neither to offend the one nor the other. From the concise style in which the *sketch* is written, and from the form in which it is published, we presume that our author's principal object is to diffuse the information which it contains. To our readers, if any apology be necessary, we would observe, that we found it impossible to give an intelligible *sketch*, of what the author himself denominates a "*sketch*." So brief a history, of so interesting a disease, will not be unacceptable. We can not, however, put our seal to it without some further qualifications.

We are sorry that our author has resorted to the unsatisfactory mode of vindicating the correctness of his principles, and the success of his practice, by contrasting the number of deaths with the recoveries. There are so many ways, in which a man, even of veracity, may wash his hands and his conscience of unfortunate cases, that such statements are little to be relied upon. Were they the true criteria, it would be a very easy matter to foil our author with his own weapons, since there are those, who have practised still more extensively in this disease than himself, and who boast of a greater degree of success, with remedies of a directly opposite character. There is an equivocation in his own remarks which gives a wide latitude to our conjectures. He mentions on the first page, that he visited in consultation three hundred and sixty patients, of whom only twelve died, and these from the association of some other disease. On another page he speaks of a number of cases which were *seen* in consultation. Now we were somewhat puzzled, at first, to ascertain what could be the difference between cases *visited* in consultation, and cases *seen* in consultation. When we perceive, however, that the cases *seen* are mostly those which were fatal, and that they are not included in the three hundred and sixty, we discover a wide difference, inasmuch as the Dr. disclaims all property in the latter. We perceive that there are scarcely any of the fortunate cases which are enumerated among those *seen*, from which we may presume, that they were nearly all *visited* in consultation, and numbered among the three hundred and sixty.

In regard to the history which the author has given of the characteristic symptoms of this disease, we would by no means impugn his veracity, or general correctness. We would observe, however, so prone are medical men to differ, that even those things, which are subject to the scrutiny of our senses, are differently felt and seen, in conformity to preconceived notions. From some general pathological remarks, which are dropped by Dr. M., particularly in the appendix, we are inclined to think that his faculties are delicately sensible with regard to the subsidentia of the epidemic of which he treats, while they are somewhat obtuse in other respects. The sinking typhus is certainly described with spirit, and we presume, in the main, correctly; but when we witness his attempt to force other diseases, which he acknowledges to be distinct, into a resemblance to it, we cannot but repeat to him the warning apothegm, *ne ultra Syncopalem*, with as much earnestness as we would exclaim, *ne Syncopalis ultra!*

He seems to deprecate, with great warmth, the use of emetics and purges, not only in the disease under consideration, but in almost all others, of which he takes occasion to speak, and particularly in bilious and nervous fevers. We have no doubt that infinite mischief is sometimes done by the injudicious use of irritating evacuants; but yet we have evidence, which nothing advanced by Dr. Miner can controvert, that free vomiting and purging, with proper remedies, are absolutely indispensible in most bilious and many nervous fevers. What, for instance, has Dr. Miner offered, which overthrows the absolute demonstration that the practical work of Hamilton contains. That the practice enforced by the latter would, in the disease described by the former, be injurious, we do not question; but, in the majority of febrile cases, the practice of our author would surely be equally preposterous. When we see such strong evidence of bias, in relation to what we have all had opportunities to observe, we can not but feel our confidence diminished, in the accuracy of his observations on the disease in question, and are lead to notice, with more caution, certain inconsistencies which are presented in his statement.

It will be recollected that, he says, " During the progress of the epidemic, every variety of pulse occurred except the *strong* and *hard.*" In the very same paragraph he observes, "At various times in the course of this disease, and even in the dying, it would occasionally give a *delusive* feeling of *fulness* and *force*, that often deceived the very best judges respecting the danger, unless attention was particularly directed to other symptoms." We know not how our author can reconcile these two sentences with each other, unless, by using the term *delusive*, he means to preclude the evidence of our senses, which if he does, we might with equal propriety, declare his own perception of the *sinking pulse* to be *delusive.*

He says that this feeling of force and fulness, sometimes occurred in articulo mortis. If so, the patient could not have died in a "paroxysm of sinking;" there must have been present some other circumstance distinct from direct prostration. He further mentions, that some recovered even after being rendered pulseless; if then the presence of a full pulse was not to be regarded as evidence of vital energy, a small one was not to be considered, in all cases, as indicating an exhaustion of the powers of life.

From the remarks which we have made, it will be seen, that, although we have freely, and we trust candidly, questioned some of our author's observations and opinions, we regard his sketch as a valuable acquisition to our medical literature, and think it ought to be in the hands of every practitioner.

Art. IV.—*Summa Observationum Medicarum ex Praxi clinica triginta Annorum depromptarum. Auctore* Lud. Josepho Schmidtmann. Med. Apud Melenses in Principatu Osnabrugensi. Vol. II. pp. 328—372. 8vo. Berolini. 1821.

The author of this valuable collection of practical observations, ranks among the most eminent and learned physicians of his country. He does not appear to have devoted himself like so many of his countrymen, to mere system making and abstract speculative disquisition. Aware, says he, that medicine can be advanced only by observation and experiment, I have avoided all empty speculation and hypothesis, in the following pages, and have confined myself to a careful and candid relation of whatever occurred to me worthy of notice, during a long course of clinical experience, and to the deduction of such inferences as were suggested and warranted by facts. The work is, indeed, purely practical, and bears strong internal evidence of the author's great industry, learning, and talent for observation. But to proceed to an account of its contents.

Chapter I. *De pleuritide et de Peripneumonia.*—The author has seen three cases of malignant or putrid pneumonia, so graphically described by Huxham. This is an exceedingly fatal form of pulmonic inflammation, almost always terminating rapidly in gangrene of the affected organ. Baglivi, in accordance with the observation of Hippocrates, says, that when patients affected with acute diseases of the lungs evince an urgent desire to set up, the prognosis is extremely unfavourable, and more particularly when there is a hissing sound in the trachea, a difficulty of expectoration, and an apparently good pulse. The truth of this observation was fully confirmed by the experience of our author. He never knew a patient to recover in whom this assemblage of symptoms occurred.

In genuine inflammatory pneumonia, the supervention of diarrhœa was generally a fatal sign, but in *bilious* pneumonia, the occurrence of such a discharge, unless excessive, usually proved beneficial. The author, has always found *active* purging in the former variety of pulmonic inflammation highly injurious, and this indeed accords with the observations of almost all who have expressed their sentiments on this subject. He is, however, less orthodox in the observation that emetics are dangerous in this disease. "Maloque consilio et etiam emetica apponuntur; id fere semper lethifero fit eventu: quod sæpius observavi." In peripneumonia notha, according to the experience of many of the most eminent practitioners of the present and preceding times, emetics are often highly beneficial, especially after the inflammatory condition has been in some degree subdued, or where the stage of excitement has never developed itself fully from a tendency to oppressive venous congestion. Emetics are still more useful in pneumonia biliosa. Richter* speaks of them in the highest terms in the treatment of this disease, and says that they will often remove the excruciating pain in the thorax, as if by enchantment. We have also the testimony of Stoll† in favour of the employment of emetics in this disease.

Convulsions supervening in acute pneumonic affections are always to be regarded as an exceedingly dangerous sign. The author never saw a recovery from pneumonia, after convulsions came on. He very justly observes, however, that the prognosis in acute diseases of the chest is often attended with much difficulty and fallacy. As an instance of the fallaciousness of the favourable appearances in affections of this kind, he relates a case of pneumonia, which after some days of appropriate treatment appeared to be nearly removed, and convalescence was predicted in a few days. Suddenly, however, the patient was seized with violent rigours: the pain of the breast ceased, and fatal apoplexy immediately supervened. *Quis mortalium eventum tam lugubrem prævidere et divinare potuisset!* says the author.

When a short, dry cough remains, and there is much dyspnœa produced by rapid walking or by ascending an acclivity, after an attack of acute pneumonia, it is an evidence, says the author, that indurations have been produced in the substance of the lungs, and which tend soon or late to terminate in phthisis. The author met with many cases in which dropsy and pneumonia were associated. This agrees with the aphorism of Stoll sec. 160. " Hydrops quoque nor rarus peripneumoniæ et pedisequens et comes."

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* Richter's Specielle Theraphie. Vol. I. p. 427.

† Ratio Medend. Vol. I.

Treatment.—The author speaks in the most favourable terms of the employment of opium and calomel in the treatment of this disease, as well as in other inflammatory affections. For this practice, he acknowledges himself indebted to Dr. Robert Hamilton.* He states, that when he first heard of this practice, it appeared to him in the highest degree objectionable, but that he was at last induced to employ it on the strong recommendation of the celebrated Vogel.† His first experiment with this remedy, he informs us, far exceeded his expectations, and he afterwards employed it, in nearly every case of inflammatory disease for more than twenty years, with decided advantage. " Prima pericula, he says, omnem longe superabunt expectationem meam: quare viginti abhinc annis et ultra non facile morbus inflammatorius mihi obvenit; et multi centeni mihi obvenere, cui *opium et calomel* faustissimo cum successu non opposuissem: *ast non stricte secundum præcepta Hamiltonii.*

After the general inflammatory symptoms had been in some degree subdued by bleeding and other antiphlogistic remedies, our author, almost uniformly prescribed one or two grains of calomel with one of opium, mornings and evenings, and in obstinate cases a similar dose at noon. In addition to this he applied vesicatories over the part affected, and ordered a decoction of senega and jalap, with camphor and muriate of ammonia. He rarely found it necessary to bleed more than three or four times.

We are fully persuaded that opium with or without calomel is a much more important remedy in inflammatory diseases than is generally admitted. In gout, dysentery, acute rheumatism, and pneumonia, we have frequently ordered this combination in large portions, with unequivocal advantage.

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* Medical Commentaries for the years 1783–84. Vol. ix. p. 191.

† Handbuch der pract. Arzneywissensh. 4 ter Theil S. 25 u. 231.

It is proper to observe, however, that bleeding, and in general, purgatives and other antiphlogistic remedies should always be premised where the general inflammatory action is very considerable. With these preliminary measures, the use of the calomel and opium, in doses of from one to two grains each, twice, thrice, or even four times a day, will in general prove decidedly beneficial.

Dr. Armstrong whose testimony deserves great respect, speaks very highly of this combination in certain inflammatory affections. The paper of Dr. Hamilton on this subject, he says "deserves to be engraven in letters of gold."

Having given the general results of his experience in relation to the pathology and character of pneumonia, the author details sixteen cases of this disease, of which a few only appear to us sufficiently interesting for selection.

CASE III. *Pleurisy speedily cured by the use of Calomel and Opium.*—A man aged thirty, of robust and athletic frame, was suddenly seized with chills, succeeded with febrile heat and a pungent pain in the left side. May 15. Complains of great pain in the head; the countenance is flushed; the tongue covered with a whitish and dry slime; the taste natural; no appetite; thirst intense; no cough; but the most vehement pungent pain in the left side. The pulse was frequent, hard, vibrating, full; the skin hot and dry, and the urine small in quantity and deep red. He was immediately bled to the extent of 16 ounces; and emulsion of gum arabic, with nitre and tartar emetic, was prescribed. An emolient cataplasm was laid on the affected side. The blood drawn was covered with a thick layer of size. In the evening the pain in the side was mitigated.

May 16th. The pain in the side, much increased; the heat of the skin intense; the thirst unquenchable; no cough; pulse frequent, large, hard and vibrating. Ten ounces of blood was drawn; and decoction of senega with nitre, camphor, tartar emetic, and simple syrup was ordered. In addition to these remedies two grains of *calomel and one of opium* were given mornings and evenings.

18th. An hour after the opium and calomel was taken the pain and oppression in the chest disappeared as if by enchantment, and an universal and profuse sweat broke out. He could now breathe without difficulty or pain; the fever, also, soon abated very considerably.

19*th*. The breast entirely free from pain and oppression. The calomel and opium were continued until the evening of this day, when he was declared convalescent.

CASE VI. *Pneumonia, with a pseudo-membraneous expectoration.*—The patient, a man aged twenty-one, was attacked with chills, succeeded by heat and a violent pain in the left side of the chest; the cough was troublesome, and the thirst excessive—the pulse was but little accelerated, small and soft. This case was treated like the preceding one, with bleeding, emulsion with nitre and camphor, blisters to the side, *calomel and opium, &c.* The case nevertheless proved fatal, and is introduced merely for the purpose of adverting to the expectoration of a *pseudo-membraneous* substance on the ninth day of the disease, similar to that which sometimes occurs in croup.

This membraneous exudation was cylindrical, hollow, and of considerable length. Pieces of the same substance continued to be spit up for several days afterwards. On the 12th day the patient died.

The expectoration of a membraneous substance is of very rare occurrence in pneumonia. Our author states that, so far as he knows, Morgagni is the only writer who distinctly mentions such a circumstance. Perhaps the case mentioned by *Tulpuis*[*] is one of this kind. This writer states that a patient who was long affected with a troublesome cough, expectorated two considerable branches of veins—duos insignes venarum ramos, adequantes singulos expansæ manus magnitudinum. There can indeed be no doubt that these supposed "venous branches" were any thing else than indurated coagulating lymph.

An instance of a polypus substance, of branched form, coughed up by a boy affected with catarrh, is mentioned by Callisen.[†] Wichmann has noticed a similar case.[‡] In the case mentioned by Strack (Hufeland's journal vol. vii. p. 162) we are left uninformed as to the character of the disease in which the membraneous expectoration occurred. He simply states that it was coughed up.

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[*] Observat. Medicinal. 1641. Lib. II. Cap. XIII. p. 118.

[†] Memoires de l'Acad. Royal de Chirurg. à Paris, 1774.

[‡] Ideen zur Diagnostick 2, Band. p. 127.

"CASE VII. *Pneumonia suddenly ending in death from metastasis of the pectoral affection to the brain.*—A man aged thirty-two was attacked with fever and symptoms of pneumonia. He complained of a sensation of great oppresssion and anxiety in the breast; intense pain in the left side of the chest; respiration confined and small; cough with bloody expectoration; the tongue dry, and covered with a white mucus; thirst unquenchable; the heat of the body intense; pulse large, full, hard, tense, vibrating and frequent. V. sectio: and unc: XIV. decoct. ex rad. althææ, stip. dulcamarae cum nitro, tartar emet. liniment. volat. et cataplasm. emolient, ad pectus. Ptisana hordeacea cum oxymel. simpl. pro portu. In the evening the symptoms were considerably mitigated. On the succeeding night, however, they again became very violent. The bleeding was repeated; the blood was covered with a layer of size of unusual thickness. The pain now extended to the right side, præcordia and hypochondria; delirium supervened; the pulse became feeble, small and soft. *Calomel* and opii āā grj; mane et vespere; vesicatorium ad pectus. Next day he was much better. A profuse sweat appearing, the fever, cough, dyspnœa, weight and pain in the chest and abdomen, and the delirium disappeared "quasi arte magica." On the morning of the following day this favourable situation of things was entirely changed. On the preceding evening, as Dr. T. was informed, the patient complained of *cholic pains*; the night was nevertheless passed with tolerable quietness. In the morning he complained of much pain in the *malleolus* of the left foot, which was found in a state of erysipelatous inflammation. Some fresh herbs and salt were applied to the inflamed part by the friends. The patient now relapsed into an obstinate state of delirium, with continual restlessness and jactitation. He was soon afterwards seized with the most violent convulsions, attended with trismus and squinting; the pulse was small, hard and frequent. Sinapisms were applied to the ankles, and a vesicatory to the back of the neck, but to no purpose. He died on the succeeding evening of the same day on which these symptoms made their appearance. It must be observed that the inflamed part of the ankle could not be brought to suppurate by any means. A blister was applied, but the surface did not discharge as usual.

It is, also, to be noted that there was no mucous or puruloid expectoration in this case. This agrees admirably with the observation of Hippocrates, in the sixty-sixth aphorism of his prognostics.

CASE XVI. *Pneumonia bilioso-nervosa.*—A robust man aged thirty-six, was seized with chills, succeeded by febrile heat, cough, a pungent pain in the chest, and cardialgia. On visiting the patient Dr. S. found him labouring under the following symptoms: pain in the head, particularly just above the eye-brows; great thirst; tongue moist and covered with a dark brown coat; constant eructations, of a bitter fluid; vomiting; great heat and tension in the pit of the stomach; frequent cough; expectoration bloody; pain in the right side very acute; great oppression in the breast; great lassitude and heaviness of the limbs; pulse frequent, soft, and rather full *(pleniusculum)*; interrupted delirium. An emetic of tart. antim. and Ipecac: was administered; which operated well, and brought off a great quantity of a bilious and fœtid fluid. The head-ache and delirium were entirely removed; the cardialgia mitigated, and pain and oppression of the breast slightly relieved; the debility was, however, very great; the pulse small, soft, frequent and scarcely perceptible under the finger. Sinapisms were now applied to the chest; and a solution of tamarinds and cremor tartar ordered for common drink. On the 5th day of the disease, the bitter taste had disappeared; and the tongue was less covered with sordes; the cough, however, was vehement and painful, and the expectoration mixed with blood. He felt himself a little stronger; the pulse was still, however, frequent, soft, and somewhat full; a gentle diarrhœa was caused by the tamarind and cremor tartar drink. On the 9th day, the cough was more troublesome, and the pain in the chest very severe; the fever, also, was considerably increased with anorexia, bitter taste, white tongue, retching, profuse night sweats, and great prostration of strength. Another emetic was now administered, followed by a cathartic mixture of sulph. soda and rhubarb. There was much bile thrown up; and all the symptoms of the disease were greatly mitigated. Gentle laxative remedies were continued for a few days longer, and the patient speedily convalesced.

Here, says the author, is an example of a disease, attended with apparently the strongest symptoms of an asthenic state, cured in a short time, by the employment of what are usually considered debilitating remedies. "One of the most fatal errors in practical medicine, is the general position, that where there is debility, tonic remedies must be used; and that purgatives are improper in acute diseases, attended with extreme debility." Debilitas, says he, ex tam variis profluit fontibus, quam variæ sunt morborum causæ: quare curatio debilitatis semper causis ejusdem accommodari debet; et nullum datur remedium, quod indiscriminatim et ubique vires prostratas extollat atque reficiat.

Chapter II. In this chapter, the author gives an account of his experience in *pneumonia notha.* This variety of pneumonia, according to the observation of Richter,[*] depends on what he terms *false* or lymphatic inflammation; in which the bronchial glands, and the bronchial system generally, are more particularly affected than the vascular system. Mr. Puchelt, whose work we have reviewed in the present number, has advanced a very different and novel opinion, concerning the pathology of this disease. He thinks that the inflammation is seated in the *venous capillaries,*—that the disease consists of *venous* inflammation of the substance of the lungs and bronchial tubes. He contends that the *venous* capillaries are as liable to that morbid condition, which constitutes inflammation, as the *arterial;* and there is certainly no good reason to be alleged against this opinion.

We have not room for any of the cases of this variety of pneumonia related by the author; he extols the use of emetics, camphor, and vesicatories to the breast. In several cases he bled, but he dealt very cautiously with laxatives. In protracted pituitous cough, he observes, that he found sweet wine, as recommended by Sydenham, very useful. Cum vina acida acore tussim exasperent, *dulcia dulcedine, pectori amica, tussim demulceant et leniant.*

Chapter III. *Concerning occult pleurisy and pneumonia.*—This variety of pneumonic inflammation, is of a chronic character, and when neglected, almost always terminates in phthisis. It is commonly the consequence of acute pleurisy or pneumonia. The pain is generally felt in a small space of the breast, often not more than half an inch in diameter, radiating occasionally from this centre, in different directions throughout the chest. The patient coughs and feels some oppression in the breast. There is seldom any distinct fever; but a circumscribed flush usually appears on the cheek of the affected side.* The pain, cough and flushing of the cheek, are readily increased by waking, dancing, and the use of even small portions of spirituous drink. These exacerbations at first, readily subside, when the causes which excite them are removed; but they return on the slightest reapplication of these causes. By degrees these symptoms become more severe; they continue longer without abatement; distinct febrile exacerbations occur towards evening; finally, the expectoration is streaked with blood, and all the symptoms of confirmed phthisis, generally, speedily supervene. These insidious inflammatory affections of the lungs, are seldom attended to sufficiently early to admit of being cured. Our author thinks that this affection is more common with women than men. It rarely occurs in children, and in persons advanced beyond the fiftieth year. The principal remedies he recommends, are small and frequent bleedings; decoction of senega with nitre; camphor emulsion with nitre; calomel and opium, and continued blistering of the affected part.

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[*] Speciella Therapie, vol. i. p. 425.

Chapter V. *Some general remarks concerning pulmonic inflammation.*—This short chapter contains nothing particularly worthy of notice in this place. It is occupied, chiefly, by an estimate of the comparative merit of the ancient and modern modes of treatment in affections of this kind; and the result is, of course, in favour of the latter—we say, of course; for whatever may be said to the contrary, by the sticklers for the excellence of ancient things, there can be no doubt, that every department of human science is gradually advancing towards a higher degree of perfection and usefulness.

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* Richter, Therapie, vol. i. p. 506.

Chapter VI. *Concerning Empyema.*—Three cases of this disease are related by the author. The first case, is one in which the empyema was removed by expectoration. "Sæpius natura novum opus exorditur, ubi conatus nostri desiere," says Baglivi; and the present case is a strong exemplification of this remark. The patient, a boy about six years of age, troubled with worms, was attacked with pleurisy. When Dr. S. first saw him, he complained of violent and piercing pain in the left side, together with all the usual symptoms of well marked pleurisy. The parents obstinately refused to have him bled; leeches were ordered, but these could not be procured; Dr. S. then requested him to be cupped, but this also was objected to by the stupid parents. Under these circumstances, he was treated with the usual antiphlogistic remedies, and rubefacients to the chest; together with calomel and opium. The disease, however, became more violent. The cough was severe and dry; the inflammation passed into suppuration with the usual symptoms of this termination. No crises appeared, either by sweat, urine, expectoration, hæmorrhage or stool. Hective fever now came on; the pain in the chest became obtuse, with a sensation of fulness, weight and tension in the affected side; there was also tumefaction of this side of the chest; respiration was confined and oppressed; there were profuse night sweats; great emaciation; want of appetite; and an evident fluctuation was heard in the thorax on turning the body. He could lie only on the affected side,—and was constrained to sit up almost constantly. Under these circumstances there could be no doubt of the existence of *empyema.* Paracentesis was recommended, but rejected by the parents with unaccountable obstinacy. Cataplasms were then applied over the affected part, with a view to favour the passage of the pus externally. While these ineffectual applications were made, the boy was suddenly seized with violent coughing, followed by an immense discharge of a yellowish inoderous pus from the lungs. The swelling of the side, as well as the pain and sensation of weight in the breast speedily subsided. The breathing also now became free. He gradually recovered, although for a considerable time after the discharge of matter took place, he manifested all the symptoms of phthisis pulmonalis. The second case of empyema related by the author, was connected with distortion of the spine; and was cured by means of an issue. The third case is an instance of empyema and vomica. The empyema was the consequence of an attack of pneumonia badly treated. When Dr. S. first saw the patient, he laboured under the following symptoms: Great emaciation; hectic; want of appetite; continual coughing with *purulent expectoration;* pain in the left side, about the ninth rib, increased by pressure; very great dyspnœa; watchfulness; and œdema of the feet. From there being purulent expectoration connected with the symptoms denoting empyema, Dr. S. concluded that there was a vomica connected with the empyema; and this most probably was the case. An issue was formed over the part in which the pain was felt. Some days after a soft and fluctuating tumor made its appearance where the issue was situated. An opening was made into this tumor, from which upwards of a pound and a-half of laudable pus flowed. Cinchona was diminished, and the abscess injected with a gently stimulating lotion. The patient recovered without difficulty. An issue was, however, kept in the affected side for two years.

Chapter VII. *Vomica expectoratione sanata.* Chapter VIII. *Polypus cavitatis pectoris, empyema simulans.*—We pass over these chapters, as not possessing sufficient interest to require a particular notice in this place.

Chapter IX. *Concerning Dysentery.*—In this chapter the author describes an epidemic dysentery as it prevailed with unexampled violence and fatality at *Mellen,* in the year 1800. The winter preceding the summer of this year was uncommonly tempestuous and cold; but the hot weather commenced early in the spring, and continued with an uniformity unusual at this season, until about the end of May, when it suddenly became so cold as to freeze water. This low temperature continued until the 20th of July, when it suddenly changed to very warm again, although the nights remained cool. The districts, in which the disease prevailed, are high and hilly; furnished with abundant small streams of fresh water; and wholly free from marshes. The author observes that in the low and moist districts surrounding the elevated parts in which the disease prevailed, there occurred but very few cases of dysentery. The author considers dysentery to be an "introverted catarrh"—in other words, a rheumatic or catarrhal affection of the mucous membrane of the intestinal canal. In this opinion he is supported by the authority of Stoll,* Van Geuns,† Plaulizky,‡ Vogler,|| Richter,§ Frank,¶ and Vogel.** He gives the following cases in evidence of the correctness of this view of the pathology of the disease. A woman was affected with a severe catarrh; suddenly this disappeared, and a violent dysenteric affection immediately supervened. A man laboured under symptoms of catarrh with cough, and on these disappearing he was suddenly attacked with dysentery. A girl having been affected for some days with excruciating rheumatic tooth-ache, was immediately taken ill with the most violent inflammatory dysentery on the former affection ceasing. A gentleman on being freed from a severe dysenteric affection, was immediately attacked with ophthalmia and rheumatic pains in the knees. "Dominus quidam dysenteria liberatus illico ophthalmia atque rheumate genuum maxime doloroso invadebatur:

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* Ratio Medendi T. III. p. 247.

† Ueber die epidemische Ruhr.

‡ Medicensch-practische Beobachtungen. 2. Samml. § 55.

|| Von der Ruhr.

§ Medical and Surgical Observations. vol. i. p. 86.

¶ Epitome de cognosc. et curand. hom. morb. lib. V. pars. II. p. 494.

** Handbuch d. pract. Heilkunde. part VI. p. 124.

alteri, dysenteria cessante, ophthalmia e vestigio consecuta est; tertio, dysenteria sublata; continuo supervenit rheuma capitis universale: puella, silente dysenteria confestim rheumatismo omnium articulorum incessebatur, alteri idem contigit."

In the commencement of the disease, when the vital powers were not yet much depressed, and there were no signs of intestinal inflammation present, the author always began the treatment with an emetic, for which purpose he employed ipecacuanha. Emetics, he thinks, are beneficial in this disease; 1st. by opposing to the intestinal irritation, a counter excitement in the stomach: 2d. by removing the constriction of the cutaneous vessels, and promoting insensible perspiration: 3d. by removing from the stomach irritating substances, whether of indigested food, vitiated secretions, or gastric sordes. By the employment of one emetic only he often succeeded in arresting the progress of mild attacks of bilious dysentery. After the operation of the emetic, he gave laxatives; preferring for this purpose the *artificial castor oil* of Vogler,* or a solution of tamarinds and manna, with glauber salts. Concerning the artificial ol. ricine, he says: "multis cum eo factis experimentis faustissimis ejus amore captus, artis consortibus id in casibus similibus tuto commendare possum. In dysenteria mulcet dolores, compescit vehementem intestinorum excitationem, obvolvit acrimonias atque eas blande evacuat."

Having evacuated the stomach and bowels, Dr. S. prescribed the *nux vomica* according to the directions of Hufeland.† He directed from two to two and a-half grains of the extract every two hours. This article, he says, generally relieved the tormina very much, but he thinks it sometimes increased the tenesmus. Along with this remedy he gave mucilaginous drinks as copiously as the patient could take. But his principal reliance was placed on opium; "hac divina, manuque experta administrata, potente medicina." The employment of opium in dysentery after proper evacuations, is not only free from pernicious consequences as has been apprehended by many practitioners, but, on the contrary, highly beneficial, and not to be neglected without exposing the patient to much pain and distress that might be advantageously relieved by its use. Sydenham regarded its employment as indispensible in disease: "Ita," says he, "necessarium est opium in hominis periti manu, ut sine illo manca sit, ac claudecit medicina.*" Dr. Armstrong observes, that although opium tends to constipate when taken in health, yet when the bowels are inflamed or highly irritated, as they are in dysentery, its tendency to this effect is much less than might be supposed, and when alternated with proper laxatives often aids considerably in bringing off stercoraceous stools. It must be always recollected, however, that this article should be very cautiously employed where the febrile symptoms run high; and that its beneficial effects can only be expected after the excitement has been somewhat reduced by antiphlogistic measures.

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* This is made as follows. ℞. Resin jalapæ, gr. ix. Sapon. venet. gr. ii. Diligenti trituratione in mortario lapideo solvantur cum ol. olivar ℥jss. Dosis pro adulto est cochleare magnum omni hora aut bihorio.

† Journal der Pract. Heilkunde. Jena. 1795. I Band. § 112.

Our author invariably directed the abdomen to be well rubbed with some rubefacient. In cases of a highly inflammatory character, or in what he calls enteritic dysentery, bleeding was practised in the commencement of the disease with great advantage. Some patients were bled four or five times in the course of a few days. After the inflammatory symptoms were sufficiently reduced, he gave in many instances opium with calomel, in repeated doses. He also directed emolient cataplasms to be applied over the abdomen in the highly inflammatory cases; or in some instances vesicatories.

The author saw five cases in which enteric dysentery was associated with a nervous condition of the system (*consociata cum statu nervoso.*) The alvine evacuations in these cases were exceedingly frequent; there was continual retching, and vomiting; excruciating tormina; great prostration of strength, the disease terminating rapidly in sphacelus. "Nullum servare valui," says the author.

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* De Dysenteria, anni 1660.

In many instances the disease assumed a malignant character, attended in the latter stage with hæmorrhage from the mouth and nose, and with petechiæ. In these cases the patient complained of a bitter taste; the tongue was covered with a yellow or blackish coat; there were no tormina. Heat of the skin intense; great prostration of the vital powers, from the very commencement; pulse small and scarcely perceptible, tympanites; constant discharges of putrid fœces; hæmorrhage, petechiæ, &c.

Chapter X. *De Arthritide.*—The author considers arthritis as a variety of gout; and ascribes its production to a depraved condition of the digestive and assimilative functions. He ascribes the proteiform appearances of this disease, as it manifests itself when located in the various parts of the system, with great accuracy and neatness. He has at different times known it to assume the shape of cardialgia, colica, strangury, blennorrhœa, apoplexy, cephalalgia, otitis, opthalmia, neuralgia, angina, glossites, pleuritis and hæmoptysis.

Arthritis is sometimes connected with fever; but it appears also frequently without it. The arthritic fever occurs under a great variety of modifications, simulating in its phenomena, inflammatory, gastric, nervous, or putrid fever. Chronic arthritis, however, occurs much more frequently than the acute form of the disease. An exceedingly dangerous occurrence in arthritis is the sudden translation of the disease from an external part to one or more of the important internal organs. The author has met with many examples of this kind. In one case disease was suddenly translated from the right knee, to the lungs; the patient was immediately seized with hæmoptysis, from which he did not recover. Arthritis has a peculiar tendency to fall upon the organs of respiration, the tongue, fauces, stomach, intestines, urinary bladder, and heart.

The author gives the history of sixteen cases of this disease, only a few of which, however, we can notice particularly.

Case I. *Arthritic Pneumonia.*—"A woman aged forty-three, of a delicate constitution, was attacked, in January 1797, with the following symptoms: chills and rigor, followed by great febrile heat, and a severe pungent pain in the left side of the chest; cough, at first dry, but in a few hours after attended with bloody expectoration: great oppression and sense of weight in the breast; sensation of great heat internally; pulse frequent, strong, tense and vibrating. She was bled to the extent of ten ounces: and decoct. ex rad. jalap. cum nitro et oxymelle, was prescribed as an internal remedy. The affected side was bathed with volatile liniment every two hours, and an emolient cataplasm applied to it. The blood was covered with size; on the third day the pain in the chest was more excruciating than ever, and the pulse as before: she was again bled eight ounces; and a grain of calomel and opium ordered twice a-day. The blood was still covered with a layer of size. On the fourth day, generally, there was diaphoresis, and the pain and oppression in the breast and bloody expectoration entirely removed; *but the joints of the left hand and fingers were inflamed, swollen, and extremely painful.* Dr. S. now felt convinced that the disease was a case of arthritic inflammation of the breast. He accordingly now prescribed a decoction of burdock-root, and dulcamara, with camphor and extract of aconitum; with fomentating applications to the affected hand. The calomel and opium were continued as before. On the second day after this occurrence the pain and swelling disappeared from the hand, and settled upon the right knee, and after having successively invaded various joints, the disease finally disappeared entirely, the urine, at the *time becoming very turpid,* and the skin moist and soft over the whole body."

Case III. *Chronic arthritic pleurisy.*—A woman aged twenty-eight, of an exceedingly slender frame and delicate constitution, having been suddenly exposed to a cold atmosphere when in a state of perspiration, was affected with violent arthritic inflammation in various parts of her body.

Six months after this attack Mr. S. saw her, and found her in the following situation: extreme debility, attended with violent arthritic pains in the joints of her extremities; great emaciation; constant watchfulness; tongue clean and taste not depraved; very little appetite for food; much thirst; occasionally afflicted with severe pain in the stomach; much flatulency; alvine and urinary discharges nearly natural; no pain in the breast, except an occasional gnawing pain in the region of the heart; slow fever; pulse one hundred and twenty in a minute; the extremities rigid and painful in the extreme. In this state she had been for five months when Dr. S. first saw her. She was ordered a nourishing diet, with a small quantity of good wine; and decoction of cort. peru. and quassia, with elixir of vitriol and extract aconiti. Her body was wrapped in flannel. On the second day after this, the pain changed its situation, and fixed upon the clavicles, sternum, jaws, occiput and back of the neck, and was attended with great oppression in the breast, and a total absence of sleep. The same remedies continued, with the addition of warm pediluvia. In a few days afterwards the arthritic pain became concentrated in the breast; the dyspnœa was extremely distressing, and the weakness greater than ever. Ten days after first prescribing for her, she still complained of oppressed respiration, tension and pain in the region of the heart, with indescribable anxiety of feeling. The pain in the region of the heart now gradually increased, and was aggravated considerably by external pressure.

There was considerable cough; an inability to lie down, or sit up; excessive thirst; the pain in the breast recurring in paroxysms of the most intense violence. At the same time that these pectoral affections were assuming the most aggravated character, the arthritic pains and swellings in the hands, fingers, clavicle, neck and scapula, disappeared. Pulse one hundred and thirty in a minute, tense, large, hard and vibrating. Rubefacients were applied to the affected part of the chest, with a diaphoretic mixture composed of vin. antim. camph.

spirit. mind. internally. *Five* leeches were also applied to the thorax over the region of the heart; and on the succeeding day a large vesicatory was laid on the breast. In a few days after this she appeared to be considerably relieved of her pectoral complaint, but the arthritic pains again returned to the hands, clavicles and back of the neck. Calomel and opium were now given, with the diaphoretic mixture just mentioned. She appeared to be recovering rapidly for several days; when all at once the pain in the breast returned with extreme violence, attended with great oppression, tension, and anxiety in the region of the heart. The fever also became very violent; the pulse being one hundred and twenty-five, full, hard and vibrating. Six ounces of blood were drawn from the arm, by which slight alleviation was procured; on the pain and distress in the chest returning, however, she was again bled next day to the extent of seven ounces. The blood in both instances was covered with a thick layer of size. She now gradually recovered under the use of calomel and opium, and a variety of diaphoretic remedies.

In looking over this case we cannot but be struck with the inefficient manner in which bleeding was practised, although unequivocally indicated by the symptoms enumerated. When the pulse was "full, hard, tense and vibrating;" and the pain in the chest extremely severe, attended with great oppression, the author after hesitating much, and recalling to mind the admonition of Celsus, "præstare anceps remedium experiri quam nullum," ventured with trembling hand, to apply *five leeches to the side of the chest!*—"quinque hirundines lateri dolenti, tremula manu applicavi;" and afterwards, "secundo effectu sanguinis evacuationis per hirundines factæ animatus et excitatus,"—to draw *six* ounces more of blood from the arm; and to repeat the bleeding on the succeeding day to the extent of *seven ounces!* E.

ART. V.—*Transactions of the Associated Apothecaries and Surgeon Apothecaries of England and Wales.* London, 1823.

As it is with us a principal object to condense, into the pages of our journal, as great a variety as possible of that which shall both entertain and instruct our readers, we would here present them with an analysis of a work, which we deem rich in matter of this character. It is admirably calculated to give us an idea of the state of medical science generally, in Great Britain, since it is made up of the joint contributions of that class, who are there most actively engaged in the duties of the profession, and who have the most ample opportunities to test principles by practice. The present volume is intended as the first of a series; it, therefore, makes a most profound obeisance to the public, in an introduction of one hundred and forty pages. This is followed by an interesting essay, on the education and duties of the general practitioner. We shall, however, unceremoniously make our way into that part of the volume, which we think will be most agreeable to the general taste of our readers, and we trust it will not pall upon their appetites, if we should cut "a huge half moon, a monstrous cantle out."

The first article, which we would notice, is a very interesting case communicated by James Johnson, M. D. which, as it is brief, we give entire.

" *Case of Chronic Inflammation and Accretion of the Pericardium to the Heart.*—About the middle of April 1821, I was requested by Mr. Golding, of St. Martin's Lane, to visit with him Mr. Bewley, a dentist, in Duke Street, St. James's, who had lately come to town from Portsmouth, where he had resided for some years. For several months past he had been in bad health, and was considered by his friends and medical attendants as threatened with pulmonary consumption. He had cough without expectoration, febrile movements in the system, and progressive emaciation. Occasionally, however, he was attacked with arthritico-rheumatic affections of the joints, and at these times the pulmonic phenomena almost entirely disappeared. Shortly before I saw him he had had a severe inflammation, apparently, of the respiratory organs, for which Mr. Golding bled him copiously, and treated him very judiciously. A sudden translation now again took place to the joints, and the thoracic symptoms had just vanished when I first saw him. We ordered him to take thirty minims of the vinum seminis colchici thrice a day, keeping the bowels open, and putting him on the most rigid regimen. In three days he found himself almost entirely free from complaint, began to sit up a little, and was quite in high spirits. In the midst of this rapid convalescence he was seized with apoplexy, and hemiplegia of the *right* side. He was now bled, blistered, cupped, purged, and had sinapisms applied to the lower extremities. In forty-eight hours he began to evince symptoms of returning sensibility, and in two or three days more knew his friends, and even answered questions, though with considerable difficulty. He continued to give hopes of recovery from the immediate danger of apoplexy for six days, when he fell back again, became comatose, and died about a week from the apoplectic attack.

" We obtained permission to open the body. The vessels of the head were gorged with blood, and there was some effusion between the tunica arachnoidea and pia mater. In making the incision for the centrum ovale, we came to a rent in the *right* posterior lobe of the cerebrum, containing a clot of blood, of about an ounce. The laceration communicated with the lateral ventricle of that side, which was filled with blood, as also the other lateral ventricle, the third, and the fourth ventricles.

"In the chest, the lungs might be pronounced sound. There were adhesions between the pleura costalis and pleura pulmonalis of the right side, and an effusion of a few ounces of serum in the left cavity of the chest. The pericardium and parites of the heart were so completely accreted together by chronic inflammation, that the scalpel could not separate them without cutting one or other structure. There was no other organic leision to be seen.

" During the time I had an opportunity of visiting this gentleman, there was always a strong action of the heart in its proper region, but no pulsation in epigastrio. The pulse was regular, but generally tensive, even after considerable evacuations from the vascular system. In this case, it will be observed, that the hemiplegia was on the same side as the ruptured vessel in the brain; but the blood had found its way into the opposite ventricle.

"To me it appears, that the disease was, from the beginning, chronic rheumatic inflammation of the pericardium, which had at last completely glued the two layers (cardiac and pericardiac) into one dense membrane. I have seen several cases of this description, within the last six or seven years, and I suspect they are much more frequent than medical men imagine. What could have produced the last and fatal determination to the brain, I know not. Could the removal of the rheumatic inflammation from the joints by the colchicum have any share in its production?—"Plura de hoc morbo non addo, cum mihi neutiquam placeat, nec placebit unquam, longis verborum ambagibus nucleum involvere."

SYDENHAM.

We would have this case particularly noticed, as illustrative of a *principle*, viz. the correspondence existing between parts composed of the same simple textures, although remote from each other. The capsule of the heart is a fibro-serous membrane, and so also are the capsules of the joints. We are the more confident of the correctness of the principle, because it was a subject of our own observation, before we had seen it noticed by any author. We recollect to have heard from an intelligent practitioner, the relation of a case, in which there occurred a remarkable translation of disease, from a dropsical joint to the pericardium, producing effusion and death. We regarded this as something unique, till a few days after, we were called in counsel in a case which exhibited nearly the same phenomena. The general diathesis, which is calculated to influence morbidly any particular texture will, if repelled from any portion of this texture, be more likely to develop itself in some other portion of the same, than in a tissue characterised by different properties. We know that many would cut, at once, a gordian knot of pathology like this, with the two edged sword of *sympathy*. For our own parts, we are content to follow a more humble example, and like honest Slop, first to try to undo it. We have long since thrown that magic word upon the same cobwebbed shelf, with the "*vis medicatrix,*" "*phusis,*" "*ethereal fire, &c. &c.*

The subject of the next article is one of great interest, and we think the writer has done it ample justice. In our analytic extracts we shall endeavour to embrace every thing necessary to the integrity of the subject, and we therefore permit the author to speak for himself.

" *On Venous Congestion*, by *Thomas Sandwith.*—Diseases of the mucous, serous, and cutaneous surfaces, constitute the greater part of the disorders of the human body. Their characters are generally simple, and the diagnosis and treatment consequently well understood. The most obscure diseases are those which are situated in the substance of the brain, the lungs, and the liver. I exclude from this enumeration the alterations in the valvular textures of the heart and great vessels, which, being mechanical, are in general easy of detection. The cause of this obscurity depends upon the peculiarity of the blood-vessels of each organ, and their vascular connexion. The brain, in addition to many remarkable plexuses of veins without valves, is furnished with the longitudinal and lateral sinuses, which appear to be reservoirs to secure the organ from pressure, and accommodate it to the variations in the state of the circulation, to which it is hourly accustomed. Perhaps the cavities of the heart perform a similar office for the lungs; at all events, their connexion constitutes a striking peculiarity: and the venous structure of the liver, veins transmitting to the heart all the blood that is distributed to the viscera of the abdomen, performing too a secretory function, and being destitute of valves, modifies and obscures its diseases.

" In those remarkable deviations from health, which originate in the operation of some unknown poison upon the blood, and which are called *fevers*, the effect of these peculiarities is very apparent. The balance of the circulation is destroyed for a time; and if the contagion has been powerful, or the constitutional peculiarities favourable, a more permanent accumulation of blood in the venous system takes place, which if not speedily fatal, is succeeded by imperfect attempts at reaction; constituting a class of fevers, first distinctly unfolded by Dr. Armstrong, and by him called *congestive* fevers. The features of these anomalous forms of fever are clearly defined; but it is not my intention to tread on ground preoccupied by so masterly a mind. I shall endeavour to point out some of those congestions of the venous system, which have fallen under my own observation, unconnected with idiopathic fever.

" A striking peculiarity in these diseases, whether they originate in general plethora or local accumulation, is the apparent debility which attends them. They are all, more or less, characterised by relaxation of the cutaneous and mucous surfaces. Hence we find the skin covered with a clammy sweat; the urine pale and abundant; vomiting sometimes, and commonly a watery diarrhœa. These appearances of debility are often fallacious, and in a practical point of view are liable to mislead.

"1. When we consider that the veins are passive organs, and that the motion of the blood they contain depends upon the vis à tergo, in other words, upon the power of arteries, *congestion of the brain* is very likely to happen. When the arterial system is either naturally feeble, or in a state of atony from previous excitement, this condition of the organ does occur; assuming the characters of apoplexy, mania, delirium tremens, epilepsy, and hysteria, according to the predisposition of the individual. Keeping in view the phenomena of these diseases when they depend on arterial excitation, the difference is readily perceived.

" The arterial system of drunkards, probably when the stomach is impaired, is always in an atonic condition. Inflammation in such subjects never produces a contracted wiry pulse, as in sounder constitutions; and from this condition of the arteries, as one would expect, they are subject to venous congestions. One of the most striking is *delirium tremens*. Dr. Armstrong thus describes it: " This disease most frequently occurs in *habitual* drunkards, and especially when, after repeated fits of intoxication, they suddenly lessen or leave off their ordinary stimulus for a time. The first feelings of indisposition are, lassitude; indistinct chills; loathing of food; uneasiness in the head; disturbed short slumbers; anxious countenance; and oppression at the pit of the stomach; and these are followed by retching or vomiting; white moist tongue; wildness and quickness of the look; weak rapid pulse; general irritability; watchfulness; tremors of the hands, and dampness of the skin increased by the slightest exercise. Confusion of mind, or forgetfulness, supervenes, which passes on to a state closely resembling mania.*" It is unnecessary to produce examples of an affection so common. The specific power of opium in this disease is a cogent argument in favour of the opinion that it depends on venous congestion.

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* Armstrong on Typhus, &c. p. 275.

"Syncope is the most complete form of venous congestion, and fainting from loss of blood is often attended with convulsions. It is not improbable, therefore, that *epilepsy*, sometimes at least, depends on congestion of the brain. The known efficacy of tonics in this disease is a further reason in favour of the opinion, if there is any truth in the axiom, that 'contraria contrariis medentur,' and experiment is a surer guide to truth than opinion. Morbid anatomy also is in its favour. According to Morgagni, in some cases of epilepsy, 'the most penetrating inquisition cannot detect any lesion of the structure of the brain.*' And when we consider the phenomena of the disease, the proof will be complete. A case which occurred to me in a hernial patient is thus described: 'There was evident sensorial disturbance. Her eyes glistened, she was quick in her answers, and her conversation was incoherent and absurd. This was a favourable opportunity for the renewal of the taxis, but the attempt was ineffectual. During the operation, the *countenance fell*, the *lips became livid* and convulsed, her eyes were inverted, foam issued from her mouth, and her whole frame was shaken by convulsions. This alarming state of things continued half an hour, when her senses returned.†' I have also witnessed a case which depended on the irritation of a worm in the stomach.

"It is notorious that irritable and feeble subjects are those most subject to *hysteria*. The disease is also, according to the experience of Sydenham and subsequent observers, generally curable by tonics and stimulants. It must, therefore, in many instances be ascribed to venous congestion of the brain. That it frequently depends on arterial excitement, and is curable by blood-letting, is also true. Putting, however, this species out of view, many of the symptoms can be explained on no other supposition than the one assigned, now that neurological hypotheses are exploded. The most striking of these is *clavus*, a circumscribed sense of pain and pressure on the top of the head, obviously dependent on an overcharged state of the longitudinal sinus, and instantaneously removed by a cordial. To this remora in the circulation is to be ascribed the oppression about the præcordia, and also the immoderate flux of tears, and of pale urine, which are marked symptoms, and may be regarded as indirect efforts of nature to relieve the oppression. In delicate females we occasionally see more serious diseases warded off by a copious flow of tears. When the Roman poet describes his heroine,

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* Morgagni Epistola de Epilepsia.

† Obs. in Med. and Surgery, p. 118.

> "Sanguineam volvens aciem, maculisque trementes
> Interfusa genas, et pallida morte futura,"

we acknowledge the hand of a master; but when shortly afterwards she is

> "Paulum *lacrymis* et mente morata,"*

the poet has drawn from his own imagination, and not from nature.

"Whether the doctrine of venous congestion of the brain will explain the phenomena of the other diseases of the nervous system, as choræa, tetanus, and hydrophobia, other observers must determine. My experience does not enable me to decide the question. It is worthy of remark, however, that the resemblance of hydrophobia to hysteria has been pointed out by Dr. Powel.†

"2. From the head to the chest the transition is natural and easy, and here the most striking example of venous congestion is the disease called *angina pectoris*. Its characters are strongly marked, so as to form a standard of comparison, and the causa proxima capable of demonstration. In a case which occurred to me, these were the symptoms. Case 4.—'Mr. J——, formerly a butcher, aged sixty-two, of a robust habit, and sanguine temperament, has sometimes had symptoms of angina pectoris. He is looking extremely pale. When he walks, a violent pain arises in the middle of the sternum, crosses the breast, and runs down each arm; the shoulders feel as though loosened from their sockets, and he is compelled to stop instantly. A vomiting sometimes succeeds. The complaint frequently comes on in the night-time. When he sits still, he feels no disorder.

"'The pulse is above one hundred, soft, and intermits every fifth or sixth pulsation.

"'He was bled three times, and the blood was sizy.

"'He died suddenly, while in the act of giving some direction to his servant rather hastily.

"'*Dissection.*—The pericardium and the heart were thickly covered with fat. Both the coronary arteries were ossified, and in some places become mere capillary tubes. The morbid process extended to the smallest ramifications. The heart itself was pale and flabby, and soft, like boiled beef The mitral valves were altered by disease, as were the semilunar valves of the aorta. The aorta itself exhibited marks of inflammation. There were no adhesions in the chest, and the lungs were sound.'

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* Virgilii Æneidos, lib. IV.

† Med. and Physical Journal, vol. xx. p. 201.

"One would naturally expect, that when the arterial system is weakened by profuse and protracted hæmorrhages, congestion of the right chamber of the heart and lungs would occur; that we should have, in short, a disease analogous to *angina pectoris*.

"3. For anatomical reasons we have already stated, the liver is more subject to venous congestion, than any other organ; and congestion of the liver, as will be seen, is the root of many other serious disorders in the remoter parts of the system; a fact which has indeed been recognised by many observers, who have, however, contented themselves with the simple statement of the observation, without pointing out the way in which the effect was produced. Many of the diseases which are merged in the unmeaning appellation of bilious disorders, dyspepsia, &c. are at bottom, examples of venous congestion of the liver; and still more which are regarded as primary affections, and treated as such, are in reality diseases of the liver.

"In the simplest form, venous congestion of the liver is denoted by paleness of the face, livor around the eyes, indigestion, dejection of spirits, and fæces without bile. The function of the large intestines is irregular, and costiveness alternates with diarrhœa. If the affection is not removed by the efforts of art or nature, the general disorder increases, and the oppression is occasionally removed by the supervention of the disease called melæna; a discharge of venous blood per anum of the colour and consistence of tar. When this salutary effort does not remove the disorder, or suggest the proper treatment, new diseases spring up in various parts of the body, as will be seen hereafter.

"Occasionally venous congestion of the liver is quickly succeeded by inflammation of the organ, an important consequence, which I shall endeavour to illustrate by an example. Case 6.—This patient was a female in the seventh month of her pregnancy, who consulted me on account of an attack of melæna. She had a slow, weak pulse, some headache, relaxed skin, pale urine, and pain in the loins, which last symptom I attributed to her situation. As she was unwilling to be bled, I prescribed calomel and saline purgatives. During three days the symptoms were unchanged. On the fourth, she had a decided attack of hepatitis. She could lie on neither side without augmenting a severe pain in the epigastrium and right side. It was painful on pressure, and she could neither inspire nor yawn without great suffering. There was also evident pyrexia, with red urine. Three bleedings cured her. I have witnessed many cases in which there was not a symptom of pyrexia. The most striking effects of venous congestion of the liver are witnessed in the disease called *cholera morbus,* a frightful and often fatal distemper in warm climates. In this country, in hot summers, it is occasionally so. In the cases which have occurred to me, the disease put on two characters. In one form the skin was cold, pale and livid, the pulse feeble, and the discharge of bile by vomiting and stool immense. In others, instead of the latter symptom, all secretion from the organ was suspended, and in addition to the relaxation of the mucous and cutaneous surfaces, there was vomiting and purging of fluid matters. In all cases the most dreadful cramps were present.

"Congestion of the liver, by impeding in its course the volume of blood that is distributed to the abdominal viscera, is also, as we have remarked already, productive of diseases in remote parts of the system. Pulmonary diseases are often seen in connexion with congestion of the liver; and the commonest form it assumes is bronchitis chronica, a disease admirably described by Dr. Armstrong.* This connexion has also been pointed out by Drs. Philip and Hastings. As might be expected, pulmonary consumption is no infrequent consequence. In his lectures, Mr. Abernethy relates a striking example, which occurred in his coachman's wife, who was apparently in the last stage of phthisis, and who recovered by the use of medicines which produced tar-like evacuations from the bowels. The case of Mr. C. is one in point. After a tremendous inflammation of the lungs and pericardium, his recovery was retarded by congestion of the liver. The disease put on the aspect of phthisis, and his stools manifested no secretion of bile. Eventually a diarrhœa of tar-like offensive matter came on, the function by the liver returned, and his recovery was then rapid and complete. All observers have pointed out the connexion of *gout* with a morbid condition of the liver, of which indeed it may be regarded as the natural cure. These vicarious diseases vary with the predisposition of the individual: accordingly we sometimes see the head, the organ that is soonest called into sympathetic action; and the consequences are *hypochondriasis*, or apoplexy. Of the former disease, I have witnessed several examples, where the mental affection was strongly marked. The abdominal excretions being black, or dark green, denoted the condition of the liver; and the affection of the head, in addition to the mental disturbance, was denoted by headache, heat of the head, and flushing of the face. There was, however, no distinctly formed pyrexia. In one example a discharge of black matter from the bowels was preceded by a rigor which resembled an ague-fit. Cases of melæna combined with *apoplexy*, are not uncommon. In two cases which fell under my observation, in addition to *coma*, the face was flushed, the head burning hot, and the blood and pulse indicated fever.

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* Armstrong on Consumption, p. 178.

" 4. As the *treatment* of many of the diseases we have enumerated has been long settled on the sure basis of experience, our remarks on this part of the subject will be very general. Indeed, in the present state of medical practice, there is more room for showing the rationale of many of the practices which have been handed down to us by our fathers, than for the addition of any new ones. It is, however, an indirect proof of the soundness of pathological speculations when they square with the established methods of cure. The fatal examples of Cullen and Brown should deter us from deviations in practice on theoretical grounds.

" We have remarked that the remora occasioned by venous congestion of the larger organs, as the brain and liver, gives rise to an increased action of the arteries; and hence it is, that this condition of the organ is in no long time complicated with inflammation. Indeed, a state of venous congestion precedes and alternates with all pyrexiat diseases, and is characterized by coldness, paleness, and shiverings. It is called by nosologists the cold stage, to distinguish it from the reaction which ensues. It is worthy of remark, that sometimes, from constitutional debility, the stage of reaction is never established; and the patient dies with all the symptoms of venous congestion. In typhus and scarlatina this is not uncommon.—In hot climates, it is in this primary stage, and this only, that remedies are availing in fevers and inflammations. During this short prelude to the storm, copious blood-letting, the warm bath, &c. moderate the reaction, the violent efforts of the heart and arteries to restore the equilibrium of the system; otherwise the squall, as Dr Rush emphatically calls it, lays the system prostrate, and disorganizes some of the vital organs. On this principle, then, the necessity of blood-letting in venous congestions of the graver kinds is obvious. At the same time, such is the state of what we will call debility, for want of a better term, that unless cordials are previously administered, and the patient put into a warm bath, a sufficiency of blood cannot be abstracted. In this climate, in such diseases, a succession of smaller bleedings is safer than one full evacuation by the lancet. In all the cases which have occurred to me, every succeeding venesection has been borne better, and has been larger than the one that preceded it; accurately noting in the phraseology of pathologists the decrease of debility, but in correcter language the diminished oppression of the venous system.

"Although in the minor forms of venous congestion, cordials are sufficient for their removal, in the graver forms they are quite inadequate. The lever is not long enough to lift the load, and it cannot be lengthened, inasmuch as stimulants excite only in certain quantities; beyond this limit they act as debilitants. In the illustration of the lever and the load to be removed, if we cannot lengthen the one, we must lighten the other; so in these diseases our only resource is, to relieve the oppression of the veins by a careful abstraction of a portion of their contents.

"We have seen, that in cases of venous congestion, the extreme vessels, the exhalants as they are called, are in an atonic state, and hence it is that the skin is supple and bedewed with a clammy sweat, the stomach nauseated with vitiated secretions; that there is often watery diarrhœa, and always an excessive flow of pale urine. Even the secretion of the liver is changed, and sometimes the effect upon the salivary glands produces a salivation. The indications arising from these symptoms are obvious: the warm bath; frictions of the surface; purgatives; mercury sometimes, and medicines which tranquillize the stomach, complete the catalogue of remedies for venous congestion."

The next article which we shall notice is a paper *On the Utility of Opium, in Certain Inflammatory Disorders*, by John Armstrong, M. D. *Lecturer on the Principles and Practice of Physic.*—The high reputation of this gentleman will suffer nothing from his pen to pass without notice.

Although the title of this article may appear, to some, to contain a paradox in principle and practice, yet, that opium *does* exert an influence, in *some* inflammatory affections, beyond the merely temporary relief of irritation and pain, has been noticed by many. The principle, however, can not be safely admitted till it be accompanied with diagnostic criteria, which shall clearly designate the cases, or the periods of disease, in which this remedy, otherwise so equivocal, may be safely employed. We no longer regard all inflammations, as resolvable into merely the tonic and the atonic, but wherever they occur and are not obviously produced by a local cause, we presume the existence of some constitutional diathesis or morbid peculiarity, qualifying the *general* character of increased or diminished action. We ought not, therefore, to be satisfied with employing those remedies which are applicable merely to one or the other of these classes, but must subjoin those which are calculated to subvert the diathesis. There may be a class of inflammatory diseases, then, for which opium may be the appropriate, secondary remedy.

Another view, however, may be taken of this subject, and to which our author seems to incline. The specific action of opium on the system may, when depletion has rendered the vascular action controllable, be counter to inflammation generally, and hence a *general remedy*, if employed in the proper stage of the disease.

We proceed to give such an analysis of our author's remarks, on this subject, as shall develope his opinions.

He observes, that his attention was first particularly called to this use of the remedy in question, by noticing the comparative results of several cases, in which, after bleeding, opium had been adventitiously employed, and others in which this remedy had been omitted.

The inference which he drew was such, that he says: "I determined to administer opium in future more boldly, in those cases which appeared most promising for its favourable effects. Within the last four years, I have prescribed large doses of opium, conjointly with blood-letting, in at least one hundred cases of acute and sub-acute abdominal inflammation, proceeding from common causes; and as its efficacy has considerably exceeded that of any other remedy tried under similar circumstances, I shall endeavour to point out in this paper, first, those circumstances, and secondly, the most efficacious doses.

"It were superfluous to observe, that abdominal inflammations vary in their seat and degree. In conjunction with blood-letting, full doses of opium have been most useful in acute inflammation of the peritoneal coat of the bowels or of the stomach, of the peritoneum more strictly so called, or of the uterus, and next, in acute inflammation of the kidneys and liver."

The author gives a sketch of the characteristic symptoms of these differently located inflammations, and then observes:

"In all these acute inflammations, once completely developed, there are two stages, namely, one of excitement, and another of collapse. In the former stage, the heat continues higher than natural, and the pulse more resisting, as well as quicker, and though the strength be oppressed, it is not really subdued; whereas, in the stage of collapse, the heat falls below the natural standard, first on the extremities and then on the trunk, while the pulse becomes less resisting than natural, and usually more frequent than in the stage of excitement—the strength being then really subdued, as evidently appears from the feebleness of each inspiration and expiration. It is in the first only of these stages that medical agents are, generally speaking, at all efficacious. In acute inflammation, the usual duration of this stage is from three to seven or eight days, sometimes shorter, and occasionally a little longer, especially when seated in the liver or kidneys; but if the inflammation be less, if it be naturally of the sub-acute form, or if it be rendered so by artificial means, it may last many days, for example, from fourteen to twenty. The sub-acute form of inflammation is distinguished from the acute, by the pain and fever being less urgent in the first, which thus differing in degree, has a more protracted course, and consequently allows more time for the favourable operation of the remedies applied. On this account there is less immediate occasion for the employment of opium in the sub-acute form, though it will be found highly useful in lessening its duration.

"In acute inflammation of the peritoneal coat of the stomach or bowels, and in what are termed acute peritonitis and hysteritis, I always make a point of seeing the patient bled in the first stage, to complete relaxation, to approaching syncope, whatever may be the quantity of blood necessary to produce that effect; for it is to the effect, and not to the quantity, which we must look for relief in such formidable cases. As soon as ever the patient recovers from the faintness, three grains at least of good opium, in the form of a *soft* pill, are given and quietness is strictly enjoined, that, if possible, sleep may be obtained. In some instances I have ordered a less quantity of the opium in a solid form, but have added sufficient of the tincture to make the dose equal. This method is preferable in highly irritable habits, because the sedative influence of the opium is thus more speedily procured. The effects of opium thus administered, are to prevent a subsequent increase in the force or frequency of the heart's action, and a return of the abdominal pain, while it induces a tendency to quiet sleep, and a copious perspiration over the whole surface. In many instances, this simple procedure will remove the inflammation at once, nothing being afterwards necessary, when the patient awakes, but spare diet, absolute rest and quietness, with an occasional mild laxative. But on all occasions, if possible, I visit the patient about three or four hours after the administration of the opium, and if there be pain on pressure in any part of the abdomen, with a hot skin, and quick jerky pulse, I order the patient, in my presence, to be promptly bled again in the same decisive manner as before. Some physicians commit a great, a fatal mistake in the treatment of acute inflammations, by dictating on paper, that a certain, a determinate quantity of blood must be taken away, and then they walk about their business, as if all were done that ought to have been done. What an absurdity, what a strange violation of duty, does this conduct involve! In the first place, a great deal of time is commonly thus lost, which is so precious in all acute inflammations; in the second, the determinate quantity of blood, set automatically down, may have no effect in removing the inflammation; and I repeat, it is solely upon the *effect* produced that the benefit of blood-letting depends, and therefore the effect should always be witnessed by the physician. It is the only safe guide. After this second abstraction of blood, carried again to complete relaxation, I generally prescribe about two grains of opium with three or four grains of calomel, exhibited in the form of pill, as the faintness disappears. The patient is again left in perfect quietness, and refreshing sleep, with free perspiration, most frequently succeeds. A third venesection is rarely requisite, but if, after the expiration of five or six hours from the second, pain and fever still exist, the operation should again be performed as before, and one grain of opium with two or three grains of calomel given almost immediately afterwards; while half a grain of the former, with two grains of the latter, may be repeated every four hours till sleep and general perspiration be induced. It is repeatedly observed in my works, and the observation was made long before their appearance, that the specific effects of mercury are easily procured when large quantities of blood are abstracted under its administration. For this reason, the calomel should be given with proportionate care, whenever copious and repeated blood-letting becomes necessary."

The author deprecates the use of drastic purges in these cases, and repeats Dr. Saunders' remark, that the best way to open the bowels is by the lancet. He recommends, also, the employment of clysters of warm water to aid in this object. When the peritoneum is the seat of the inflammation, however, he thinks that cathartics are not so objectionable. In acute hepatitis he recommends the conjoined use of calomel with opium and saline purges. So strong is our author's conviction of the value of his favourite remedy, that he observes:

"So great indeed is my confidence in full doses of opium in peritoneal enteritis, that if compelled to say, supposing myself the subject of the disorder, whether I would exclusively rely upon them solely, or upon blood-letting solely, I should certainly fix upon the former; at the same time I should like to have the simultaneous influence of both remedies, being convinced, that they are far more serviceable combinedly, than separately employed."

The author also refers to the experience of other practitioners:

"Though in the country my success was considerable in what is vaguely called puerperal fever, yet under the same treatment in London, namely, bleeding and purging, I am fully persuaded that a great many patients would have been lost. Women are much more irritable in London than in the country, probably on account of their more sedentary and artificial habits; and by consequence they are much more liable to that reaction of the heart and general irritation, which are so apt to follow copious bleeding in them, and which appear to renew the inflammation when allowed to advance, but which may almost invariably be controlled, by full doses of opium given at the precise juncture before mentioned."

He observes that caution is to be used fully to subdue the vascular excitement, when the brain is particularly affected:

"As opium has a specific effect on the vessels in the head, great care is necessary in its exhibition, when the brain is affected. One lady whom I attended, the wife of a medical practitioner, laboured under what is denominated puerperal fever, a few days after delivery. In her the uterus, peritoneum, liver, and brain were all at the same time inflamed. She had been bled once copiously when I saw her, without any decided relief. By my orders she was bled a second time to complete relaxation. Before this blood-letting, her tongue was as dry as a stick in the centre, but it became moist under the operation; and as all signs of inflammation were removed from the brain, I therefore prescribed a full opiate immediately afterwards, and with the best effect."

On inflammations of the chest, and of the membranes generally, he remarks:

"In several cases of acute inflammation of the pericardium, of the pleura, and of the substance of the lungs, I have tried the large doses of opium after copious venesection, with similar benefit as in the acute abdominal inflammation before mentioned; but it is a practice which I would not be understood to recommend in inflammation of the mucous membrane of the bronchia, an affection which requires, in many instances, the greatest circumspection as to blood letting, and in which those measures which act simultaneously on the bowels and on the skin are singularly useful. Where the heat on the surface is universally high in bronchitis, and the pulse at the same time expanded and resisting, I have found moderate venesection very serviceable; but when the heat is subdued, and the pulse small and compressible, I have generally avoided it altogether, and trusted to the forementioned means, with an antiphlogistic diet, and a regulated temperature. One of the leading advantages of what might be called anatomical physiology is the ascertainment of the different structures and functions of adjacent parts; and another of the leading advantages of what might be called anatomical pathology is the different results which are displayed, by an accurate examination of those parts after death. But minute observation of the rise, progress, and decline of the symptoms, together with an exact register of the effects of remedies at these different periods, are still necessary to enable us to turn our anatomical physiology, and our anatomical pathology to great practical account. It appears to me, that the French, generally speaking, excel the English in anatomical physiology, and in anatomical pathology; but it also appears to me equally certain, that they have not observed either the symptoms, or the effects of remedies so accurately as we have done, and the English therefore really excel them in the precise application of remedies. But this remark is only referrible to those physicians in this country, who, observing and thinking for themselves, merely deem symptoms the indications of disease, and strive to connect them, as closely as possible, with the condition of different parts of the body upon which they depend; for it must be admitted, that those practitioners who still pursue the nosological method of affixing to certain symptoms an abstract name without a knowledge of the condition with which they are connected,—it must, I repeat, be admitted, that the practice of such men is mere empiricism, similar to that which the public passively adopt and dangerously apply from tradition.

"Acute inflammation of the mucous membrane of the small or large intestines is by no means so common as acute inflammation of the peritoneal covering, except in certain epidemic constitutions; but when attacks of this form exist in the villous lining, copious blood-letting, so far as I have observed, followed up by full doses of opium, will generally cut short the inflammation at once, or reduce it to a sub-acute form, which will yield soon afterwards to milder measures. Sub-acute inflammation of the mucous membrane, especially of that portion which invests the small intestines, is exceedingly common as an original affection in this country, both among children and adults. It is generally denoted by an obscure pain in some part of the abdomen increased under pressure, and accompanied by a quick soft pulse, a hottish skin, a slightly furred tongue remarkably red at the top, and a short way thence round the edges, while the stools, from an increased mixture of mucus, most frequently have an oleaginous sort of consistence, and are somewhat darker and more offensive than natural. In the London Fever Hospital I have had a great many opportunities of pointing out this particular form of inflammation to my pupils, and also of showing the great efficacy of small or moderate doses of calomel conjoined with a few grains of rhubarb, and assisted by a little cold-drawn castor oil. The

French pathologists have overlooked the general connexion which a disordered state of the liver has with sub-acute inflammation of the mucous membrane of the intestines. Wherever this connexion exists, small or moderate doses of calomel, united with mild laxatives, will be found highly useful, seemingly by gently dislodging the morbid accumulations in the bowels, and particularly by increasing a flow of bile, from which, probably, the blood finds a readier access through the liver, and thus influences the circulation of the splenic, the superior and inferior mesenteric veins, and their ramifications. In all cases, however, of this complicated nature, I have applied leeches to the abdomen, and repeated them as long as there was any pain on pressure; and experience has taught me that they may be employed preferably to general blood-letting in most sub-acute inflammations of the mucous membrane of the bowels. In such examples, the blandest and sparest diet is necessary, for any deviation in that respect is apt to maintain the inflammation, in defiance of the best remedies. The more we attend to minutiæ in the general management, which involves diet, temperature, quietude, and other points, the more shall we be convinced of their vast importance in determining the results of our practice. In fevers which proceed from peculiar causes, such as malaria, and the specific contagions, sub-acute inflammation of the mucous membrane of the small intestines, particularly of the lower portion of the ilium, is by no means uncommon; but, as in the acute forms of such inflammation, it may be laid down as an axiom, that opium is prejudicial, while the tongue continues dry. Besides, in such cases, the brain and bronchial lining are often sub-acutely inflamed at the same time, a combination which contra-indicates the administration of this medicine.

"If we wish to arrive at any thing like just principles to guide us in the application of remedies, we must discard suppositions *à priori* on the subject, and minutely note not only all the circumstances under which any particular remedy is given, but all the effects which it produces; for the same remedy produces such different effects under different circumstances, that it might be regarded, practically at least, as a different agent, so powerful is the modifying influence of special conditions of the system."

The volume also contains an article on the suture of the cleft palate, by Thomas Alcock, Surgeon, accompanied with a plate illustrating the manner in which union was effected.

The same operation has recently been successfully performed by Dr. Smith of New Haven, who will shortly furnish us with an article on this subject. We do not know that, except in these two cases, the operation has ever been attempted. The influence which the suture of the lip is observed to have, in effecting the approximation of the divided portions of the palate, would indicate the more complete success of applying the force directly to this part.

ORIGINAL DEPARTMENT.

Art. I.—*Supplement to an Essay on Digestion.* By N. R. Smith, M. D. Professor of Anatomy and Physiology in the Jefferson Medical College of Philadelphia.

In a recent attempt at something, on the subject of digestion, more conformable than the present theory, to opinions now entertained in relation to life, and to the principles which have obtained in other branches of science, I did not promise myself, or the public, more than to call their attention to some important defects, in the principles of the hypothesis which is so generally and tacitly received.* At the same time, however, I did not despair of being able to suggest something, not heretofore advanced, which should, in part, supply the deficiency that might result from successfully maintaining the above objections. Although I may have manifested a degree of earnestness in advocating my opinions, I trust that my remarks no where betray a confidence that I should at once overthrow that, which has been the work of so many hands, and upon which rests the property of so many speculators in physiology and pathology. Such being my anticipations, therefore, the reception, with which the essay has met, can not but be highly gratifying. That it should be deemed worthy of consideration, in opposition to the mass of opinion which sanctions the present system, is the highest degree of immediate success which can be anticipated for an attempt of this kind. But I know that, in the minds of many persons of discernment, the circumstances which are there concentrated upon this subject, have given rise to a train of inquisitive reflection that has been by no means unfavourable to the opinions which I have endeavoured to substantiate.

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* See Preface to the Essay.

They have been led to appreciate the inadequacy of the mode of reasoning, which has been generally employed in relation to the functions of life, and which was alluded to in the following words:

> " When we confine our inquiries to any particular science, with the laws of which we are acquainted, and reason from an effect to a cause, which in its operations we know to be controlled by those laws, there need be no fallacy. But if we enter another field of science, the laws of which we have not investigated, and reason from an effect to a cause, we shall almost certainly fall into an error, for we unconsciously attribute the effect to a cause with the operations of which we are familiar. Thus, if we combine two inorganic substances, and after a time, observe that a remarkable change has taken place in their properties, we at once, and with propriety, attribute it to the influence of chemical affinities; for we know that such substances are exclusively under the control of physical properties. But if we convey certain substances into the stomach of an animal, a polypus for instance, and upon removing them after a considerable time, discover that they have become very much changed, having received new chemical and sensible properties, it is altogether unwarrantable to infer that these changes are wholly the effect of chemical influence; for, as the stomach of this and of every other animal is indued with certain vital properties, and as we are not yet fully acquainted with their laws or uniform habits of action, we can not say how much, in this instance, is to be attributed to their influence.
>
> " That similar effects, then, in any particular science are referrible to the same cause, is generally true; but that similar effects in two distinct sciences, the cause being known in one, are referrible to the same cause, is, in principle, false."

And again, "Experiments upon living animals, with a view to multiplying facts in relation to life, appear to characterise the researches of the present day. That these under some circumstances, and performed with proper precaution may yield useful matter, is undeniable; but it is necessary to their success that we should, to a certain extent, be acquainted with the properties of life, and laws by which the exertion of them is governed; otherwise, we do not know what effects they may be capable of accomplishing, and are in danger of attributing the results of our experiments to causes with which we are more familiar. The little progress which has been made in physiology by the multitude of these experiments, confirms what I have stated. We perceive that experimentors, who may even essentially differ in opinion, find no difficulty in substantiating their favourite notions, by the same series of experiments."

The equivocal character of many of the experiments which have been relied upon, and their inconsistency with each other; the extreme difficulty of demonstrating any solvent powers in the gastric liquor out of the stomach, and even the absolute impossibility of doing it, in the hands of some of the ablest chemists, who were, nevertheless, believers in its agency; the equivocal tendency of the post mortem erosions of the stomach; the inconsistency of the experiments of W. Philip with the common hypothesis, irresistibly proving, by the immediate suspension of digestion which follows the division of the eighth pair of nerves, that there is something beyond chemical agency; the same effects being produced by any sudden emotion of the mind, or other cause which may be supposed to divert nervous influence from the stomach, are all circumstances which we know have been appreciated as of no small weight.

The supposition, too, that so important a change is so *rapidly* wrought, and upon so large a volume of matter, must have appeared inconsistent with the analogy of other assimilative processes. The want of uniform characteristic properties in the chyme, and the fact that chyle resembling that of the lacteals is not found in the intestines, I believe have had their weight, as have also the objections drawn from the anatomy of organs concerned in digestion, the inadequacy of the thoracic duct to the performance of the functions attributed to it by the theory in question, the redundancy in the magnitude and structure of the liver, and finally the want of any peculiarity of structure in the mucous membrane of the stomach, corresponding to the peculiar and extraordinary function attributed to it, viz. the secretion of the gastric juice.

I cannot but flatter myself, from the opinions which have been expressed, that the circumstances brought together, as warranting my position that a portion of the aliment is taken up by the extreme veins and in them prepared for a still greater change in the capillary system of the liver, have been favourably appreciated. Among these it will be recollected, by those who have perused the essay, are, first, the fact that the absorption of *some* substances by the veins, is unquestionably performed, as proved by Majendie and others; second, the effects of the division of the eighth pair of nerves; third, the analogy between the digestion of plants and of animals; fourth, the digestion of some of the lower orders of animals, in which nothing like gastric juice can be detected; fifth, the fact that all the subsequent stages of assimilation are effected in capillary vessels, as well as all the other changes which are wrought upon the circulating fluids; sixth, the circulation of the vena portæ, which hitherto has not been satisfactorily accounted for; seventh, the structure and anatomical relations of the liver, which, by our hypothesis, is redeemed from its comparative physiological insignificance; eighth, the phenomena of the fœtal circulation, and the analogy existing between the nourishment of the fœtus by the veins of the placenta, and nourishment after birth by the veins of the stomach and intestines; these two systems of capillaries being opposite extremes of the same continuous vessel, the vena portæ, from one extreme of which to the other I suppose the function of digestion to be transferred at the time of birth.

I could not flatter myself, however, even if I were so fortunate as to have adopted the explanation of these phenomena, which is, in the main, true, that it was at once wrought into an unobjectionable shape, or undeformed by error. The circumstances under which the materials of the essay were brought together; the limited opportunities which I enjoyed of intercourse with enlightened members of the profession, and of access to the original memorials on this subject, a constant routine of laborious country practice, and, in winter, the responsibility of a course of lectures on anatomy, without even an assistant in my dissecting, would have precluded this, though the nature of the subject were susceptible of it. Subsequent impartial inquiry, however, has confirmed my confidence in the general correctness of the principles advanced. At the same time I frankly acknowledge, that there are some important deficiences, which resulted from my not having properly appreciated certain circumstances hostile to my opinions and friendly to the theory of the gastric juice. On examining the details of the experiments in relation to this subject, performed by Spallanzani, Gosse and Stevens, I am satisfied that there is a greater change wrought upon the contents of the stomach, through the *medium* of the fluids contained in it, than I had been led to suppose. I trust, however, to make it clearly appear, that this change is not wrought by the chemical action of a fluid, possessing the remarkable properties attributed to the gastric juice; but that the secretions of the stomach are not necessarily remarkably different from the saliva, or the mucous secretions of other parts. In the essay I hinted that the aliment might be, before absorption, resolved, by the *powers of life*, into its proximate or ultimate principles. None of my positions are inconsistent with such an hypothesis. On the contrary, the mode of reasoning there adopted, and the principles advanced, although they are incompatible with the idea of a chemical solution taking place in the stomach, nevertheless, harmonise admirably with the supposition that this may be effected, in some way, by the vital powers. That I have subscribed to nothing which would preclude inquiry into the changes which life may effect upon the aliment, while yet in the stomach; and that the logic, which I employed, left me completely at liberty to prosecute such an investigation, and even prompted to it, is apparent from the following:

> "We cannot, by them, accurately determine, how much is the effect of physical, and how much of vital properties, until we know something more of the powers of the *latter*. It would, therefore, be more profitable, if we were to direct our attention to inquiring what degree of control *they* exert over the phenomena of life, rather than to inquiring how much influence the chemical affinities have over the same."

Perhaps it is already anticipated, that I would attribute the effects, which are produced on the aliment in the stomach, preparatory to absorption, to the nervous influence of that organ, using the exhaled fluids as merely a medium of transmission.

The vague conjectures which were thrown out by some of the earlier physiologists concerning the subtile fluid, which they supposed to pervade every part of the nervous system and to serve as the missive agent of volition and sensation, are to be regarded as the result of a habit of thought, unconsciously acquired by observation of natural phenomena, by which it becomes almost impossible to conceive of the relation of cause and effect, between two substances, without presuming some material intercourse. Nothing, however, analogous to this imperceptible principle, had yet been discovered in physics; hence, when, by the employment of the inductive philosophy, the mode of reasoning on these subjects became more rigid, the idea of a nervous fluid, or any other subtile agent, which could neither be felt nor seen, was regarded as an unwarrantable assumption. It is a little remarkable, however, that even the fastidiousness of the inductive philosophy could not reject language of similar import, though more abstracted. It has never been considered illogical to speak of the transmission of nervous influence; but who can use this language, without conceiving an idea of the passage of something material? Experimental philosophy itself, however, soon detected in physics, subtile principles, corresponding to the nervous fluid of life. Aeriform elementary bodies were evolved, imperceptible to most of our senses, and rather characterised by the effects which they produced upon other and more palpable substances, than by any sensible properties of their own.

The discovery of the electric principle, so obscure in its nature but so remarkable in its effects, was a momentous intellectual achievement in this department of science. The galvanic modification of this principle had accidentally been discovered to have a remarkable influence over the organs of life. From certain effects produced by it, upon the muscles of animals recently dead, Galvani and others were led to suspect the identity of this fluid with the agent of nervous influence, or, at least, its resemblance to it. This *rationally* revived idea of the existence of a nervous fluid, supported by so strong an analogy, and even by experiment, would, at that time, have been more regarded, had it not shared the odium which had fallen upon the unfounded speculations of the earlier writers on this subject.

It was not till recently, that the experiments of Wilson Philip and others, compelled the more particular attention of men of science to this subject; employing the inductive philosophy to establish, upon the imperishable basis of fact, an hypothesis, which it once properly rejected, because, then, it was neither an axiom nor an induction from the analogy of the collateral sciences.

The experiments, which are chiefly relied upon, as proving the identity of the nervous influence with the galvanic fluid, or, as is only conceded by most physiologists, its resemblance to it, are, first, the application of the latter agent to the nerves of animals after their connection with the brain has been destroyed, or immediately after death, before the muscles may be supposed to have lost their susceptibility of contraction, and which is found to produce powerful contractions precisely similar to those effected by the agent transmitted from the will. The same effect is not produced by any other extraneous agent. From this absolute *identity* of result, we may, at least, safely infer a *similarity* of cause.

Second, the substitution of the galvanic fluid for the nervous influence in the functions of the stomach and lungs, as was apparently effected by Philip. To accomplish this, he first divided the eighth pair of nerves, and on comparing the result with the ordinary phenomena of digestion, he found that the process of assimilation was completely and immediately suspended. He then connected one pole of the galvanic battery, with the stomachic extremity of the divided nerve, the other with the region of the stomach, and immediately the functions of the organ were resumed. From comparing this condition of the stomach, with that in which the galvanic battery was not employed, and also with that in which the nerves were not divided, he satisfied himself of the sufficiency of the galvanic fluid, as a substitute for nervous influence, and hence inferred their identity. He supposes, however, that it is only indirectly that the nervous and the galvanic fluids influence digestion, by promoting the secretion of the gastric juice. A little reflection must, as I think, convince us that this inference is by no means necessary, nor indeed warrantable. He does not arrive at this conclusion, from having actually seen the secretion of the gastric juice to be suspended by the division of the nerves; not from having compared the quality and properties of the fluids secreted, in both cases; but from the *presumption* that the function of digestion can be affected by it in no other way. Such a conclusion is incorrect, because, not fully knowing the nature and influence of the vital powers, he does not know but that the interruption of them may influence digestion in some other way, even although we grant that the gastric juice is essential to digestion.

The above inference of Mr. Philip, obviously rendered it necessary for him to presume the indispensibility, every where, of the nervous fluid to secretion. It is here that Mr. Philip's doctrine is vulnerable, and here it has been successfully attacked by Mr. Brodie. This gentleman has proved by a series of experiments, and in the most satisfactory manner, that the nerves are no more essential to secretion than they are to circulation. Mr. Brodie, I know, goes still further, and infers the fallacy of Mr. Philip's observations, in regard to the interruption of the digestive process, by the division of the gastric nerves. The statement of the latter gentleman, however, in relation to the *final* effect witnessed by him, is so substantiated that it can not well be denied, and although some of Mr. Brodie's experiments may appear, at first view, to render his results equivocal; yet Mr. Philip has in reply, as I think, satisfactorily pointed out certain circumstances, necessary to a complete interruption of the nervous influence, which were not fully attended to by Mr. Brodie. Besides, we have, in confirmation of Mr. Philip's observations, certain natural phenomena, which bear a strong analogy to the effects supposed to be produced by the division of the nerves. Sudden and deep emotions of the mind, violent exercise, the infliction of extreme pain, causes which make a powerful impression upon the nervous system, and therefore may be supposed to divert nervous influence from this organ, are found to interrupt at once the digestive process. Mr. Philip's statement, therefore, with regard to the final effect which results from the division of the nerves, is probably correct; but there is another circumstance, which contributes to invalidate his supposition that it is accomplished by interrupting the gastric secretions. We are compelled to admit, that the change which the food undergoes in the stomach, may take place remotely from the *surface* of the organ, where the fluid in question is exhaled. We are compelled to admit, too, that it will even take place in hollow balls, perforated with small holes, through which the supposed solvent fluid can only get access slowly. Hence it is certain that it must take place simultaneously through the whole mass, by the medium of the fluid which has been for some time accumulating. Neither Mr. Philip, nor any one, who advocates the theory of solution by the gastric fluid, will deny that this fluid does accumulate in the stomach. Indeed, all their arguments are either built upon, or imply the presumption that it often exists, in quantity, in that organ. This being the case, then, Mr. Philip's supposition, that the division of the nerves interrupts digestion only by suppressing the secretion, is obviously inadequate. He states that digestion *immediately* ceases after the division, and we know too, that the same effect immediately follows emotions of the minds, but if the effect results only from the suppression of the secretion, it is obvious that the solution ought not to be *immediately* suspended. If, after the secretion of the fluid, the process is chemical, as is stated, it surely ought to be continued, at least for a time, although all vital influence be withdrawn.

The above experiments, therefore, and the natural phenomena which we have mentioned, irresistibly prove, that the nerves have *directly* an important influence upon the process of digestion. But shall we say with Wilson Philip, that it is through the agency of a fluid identified with the principle of galvanism? If the subject be viewed with candor and in its proper light, I think that even this position can not be regarded as absurb. It is unphilosophical to reproach the advocates of such an opinion, with attempting to pry into the forbidden secrets of nature, and of wasting their intellectual efforts upon that which is unattainable. Let it not be supposed that they are attempting to develope the essential nature of matter, of causation, or of life; but merely to interpose other links in the chain of sequent causes and effects.

When we look back, and trace the progress of the mind to the present state of our knowledge, when we see it following the flight of comets, weighing the sun in a balance, measuring the velocity of light and imprisoning the lightnings of heaven; when we see it dividing and subdividing the ancient elements into subtile principles, of the nature of which no anticipation could have been formed, and, at each step, evolving new agents which enable it to act still more minutely on the atoms of matter, what presumption is it not to determine what it shall be unable to accomplish hereafter? The innate propensity to inquiry, which we possess, will not suffer us to remain satisfied with our acquisitions, while there exists any circumstance, that may lead us to a more intimate acquaintance with the secret agents, by which matter acts upon matter. The mind should not be too much hampered with definitive rules, which, as our knowledge advances, may be found altogether inadequate to its powers; nor should it be hedged in and limited in its sphere, lest it encroach upon venerable dogmas. *Truth can never be hostile to the interests of man, nor to the dignity of human nature.*

Besides that we have the experiments and the opinions of one of the most logical physiologists of the present day, and these confirmed by others, there are further reasons why the identity of the nervous and galvanic fluids is not to be regarded as an absurdity. It is certainly not improbable, that *animal life* may employ agents equally sublimated with those which pervade inanimate matter, and which confer upon that its physical constitution or *material vitality*. Not improbable? is it not a *fact* beyond the reach of sophistry, that in some instances, at least, the electric fluid is one of the instruments of life, and that the employment of it is under the controul of the nervous system, as in the torpedo and electric eel? The voluntary phosphorescence of the fire-fly, and other insects, is equally illustrative of our principle.

It is not necessary, however, that I should further vindicate the opinions of those who have assumed the above position. I only claim that the two fluids bear a strong *analogy* to each other, in their mode of operation and in their effects. In this I am supported by the observation and opinions of nearly all the physiologists of the present day. Cooke, in a very learned work on the physiology and pathology of the nervous system, observes as follows:

"That nervous influence may depend on galvanism, or some other modification of electricity, has been lately, with several physiologists, a favourite hypothesis. The subtilty of the galvanic power, the velocity of its motion, its action on muscles through the nerves, and the means of diminishing, extinguishing,* and renewing the susceptibility of animals to its influence, are circumstances alleged in support of this doctrine. Professor Aldini, from his experiments, infers that a peculiar etherial fluid is continually generated in the animal economy; that it is connected with the functions of life; and that as there is a metallic pile, composed of metals and fluids, so there is also an animal pile, consisting of living animal substances. Dr. Valli remarks, that substances which conduct electricity, are likewise conductors of the nervous fluid; and substances which are not conductors of electricity, are not conductors of the nervous fluid.

"Mr. Good, after adverting to the opinion that oxygen may be the cause of fibrous irritability, and observing that it was never conceived altogether competent to the production of muscular motion and sensation, says: 'Hence other gases have alternately been glanced at, as affording the chief forms of this recondite and attenuate power. Electricity has been principally studied with this express view; and the study has, at length, been crowned with a success, which, though by no means perfect, opens to us, perhaps, the way to perfection. In consequence of the experiments of Cotugno, Vassali-Eandi, Galvani, Volta, and many other celebrated philosophers, it has ultimately been demonstrated that animals are capable of generating or exciting an electric aura in their own bodies, as well as of receiving it from without; that this electric aura is possessed of all, or nearly all, the properties of common or metallic electricity.† The mode by which the body, or rather the nerves, become possessed of this mysterious and truly spiritual aura, is still doubtful. That it is rather received from the surrounding atmosphere than communicated by our food, is, I believe, generally admitted; and hence, like caloric and oxygen, it commonly enters into the system in the act of respiration, and forms a constituent part of the calor ventusque vitalis of the poet.* Fishes, he adds, absorb atmospheric air in general, not by the lungs, for they have none, but by gills, which answer their purpose; and several of them, as the torpedo, gymnotus electricus, and silurus, secern the galvanic aura, of which it contains the basis, not by the brain, but by an organ which enables them to secern it in a much larger quantity, and at will; an organ which is a natural voltaic pile, and like the voltaic pile, enables them to communicate it, in an aggregate state, to other animals, upon contact, in the mode of sensible and often very severe shocks.'†

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* Both the galvanic and nervous power are destroyed by an exposure to sulphuretted hydrogen gas, carbonic vapours, &c. See account of experiments on galvanism, in the supplement to the Encyclopædia Britannica, vol. i. p. 681.

† Good, vol. i. p. 412.

"Speaking of the galvanic and electric auras, which he considers as the same, Mr. Good says: 'It is almost reduced to a certainty, that this common aura constitutes the nervous fluid; and, in man, at least, it should seem therefore to be secreted from the brain, and hence diffused over the body by the course of the nerves.'‡

"Mr. Carlisle, in a communication with which he has favoured me respecting the nature of the nervous power, says: 'The facts elicited by galvanic discoveries, added to the former proofs of electrical discharges from the nervous systems of the gymnotus§ and torpedo, and these genuine electrical sparks being clearly issued at the voluntary discretion of those animals, formed a series of leading points, very promising of some improvements in the knowledge of the brain and nerves; but no such result has yet occurred which might become applicable to the healing art. I have long entertained suspicions that both animal volition, and the more remarkable secretory changes, are governed by electricity, and have ventured to mention those conjectures in the two Croonian Lectures, printed in the Transactions of the Royal Society of London, for the years 1804 and 1805; but any conclusive inductions to be drawn from such intricate and multifarious phenomena, require more extensive researches and more undivided attention than I am able to bestow."

Good remarks as follows: "Whatever be the nature of the active and etherial fluid which was thus traced by Stuart, and has since been fully established by Galvani, there can be no question of its having a powerful influence upon many branches or divisions of the nervous system, though not upon all. Its effects upon the muscles of an animal for some hours after death are too well known to be particularized: and Dr. Philip seems to have shown, by various trains of experiments,* that it is equally capable of maintaining respiration, and the operation of several of the animal secretions, especially those that induce digestion, for as long a period. But in drawing from such facts the corollary that the 'IDENTITY of galvanic electricity and nervous influence is established by these experiments;' he seems to proceed farther than he is warranted: for we have no right to say more, than that galvanic electricity is a stimulus exciting the nervous influence into a state of continued secretion, or continued action; which may possibly be done by various other stimuli, as well as by that of galvanism."

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* Lucretius. † Good, vol. i. p. 413. ‡ Ibid, p. 119.

§ "A particular adaptation for the nerves which supply the electrical batteries of the torpedo and gymnotus, Mr. Carlisle says, is observable on the exit of each from the scull; over which there is a firm cartillage acting as a yoke, with a muscle affixed to it, for the obvious purpose of compression; so that a voluntary muscle probably governs the operations of the battery."—*Phil. Trans.* 1805. p. 11.

And again: "This, however, is not mere conjecture: for in different ramifications of the nerves, we can trace such different effects actually produced; and as it has sufficiently appeared that the operative power is a quick and subtle fluid, we are directly led to conclude that such difference of effects must depend on a diversity of fluids, or on various modifications of a common fluid in different ramifications: the last of which explanations is by far the simplest and easiest."

Mr. Abernethy has said, that he considers it already demonstrated that they are electrical actions, which cause the various combinations and decompositions, so constantly occurring in all parts of the body. Sir Everard Home expresses a similar opinion.

Some recent writers have suggested, that the nervous fluid is electricity brought under the control of life, and divested of some of its properties; becoming, what they denominate animal electricity. There is, indeed, something peculiar in the electricity of the torpedo and the gymnotus, since it has been ascertained that it can not be conveyed by a metallic conductor, nor will influence the most delicate electrometer. These are circumstances which explain the failure of a great many of those experiments by which it has been attempted to demonstrate, unequivocally, the presence of this fluid in the system.

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* Phil. Trans. 1815. p. 5—90.

It is now, I believe, well ascertained and generally admitted, that chemical affinity is merely a modification of the electric principle. That chemical compositions and decompositions are greatly controlled by it, and that its presence renders those substances active agents, which before were apparently inert, no one will deny. For the sake, however, of illustrating the analogous offices of the nervous fluid, or animal electricity, I will quote an experiment of Sir Humphrey Davy.

"A few globules of mercury are placed in a vessel containing common pump water; or any water that contains a small quantity of saline impregnation; wires from a battery of one thousand double plates, not very strongly charged, are introduced into the vessel opposite to each other, so as to reach the bottom; as soon as the circle is completed, the mercury will be violently agitated, each globule will become elongated towards the positive pole, but will retain its circular outline in the part opposite to the negative pole; oxide will be given off from this part, which is positive, but no hydrogene from the part which is negative, and the oxide will pass in a rapid current from the positive towards the negative pole. As long as no hydrogene is given off, the globule is in continued agitation, and a stream of oxide flows with great rapidity from the positive to the negative surfaces; and the negative surfaces of the mercury approach rapidly towards the positive, which are at rest; if the conducting power of the water is exalted by the addition of more of the saline impregnation, or if the charge of the battery be increased, hydrogene will be given off from the negative poles; and the instant this happens the globules become stationary; as if the same power which gave motion to the mercury was neutralized by, or employed in, the evolution of the hydrogene. There are many other remarkable phenomena connected with the operation of electricity on mercury, in contact with water; which may be urged in favour of the idea, that chemical and electrical attraction depend upon the same cause, and which will possibly lead to new views respecting the elements of matter; but the consideration of them properly belongs to a more advanced division of this work."

Since, then, between the nervous influence of life and the electric principle of matter, there is such an analogy as almost amounts to identity, and since it is absolutely certain that the electric fluid is capable of establishing an active relation between substances, which before were perfectly inert with respect to each other, giving to water, for instance, the power of acting upon, and dissolving some of the most insoluble substances; is it not rational to suppose, that the nervous influence of the stomach, may bear the same relation to the exhaled fluids of that organ, in regard to the solution of its contents, that the electric influence does to the pump water, in regard to its action upon the mercury, in the above experiment? Is it not more rational to suppose, that a fluid contained in the stomach, possessing no remarkable chemical properties inherent in its own constitution, may serve as a medium, through which the vital agent, whatever it may be, acts upon, decomposes, and recombines the various alimentary substances; than to suppose that these changes are effected, by the immediate chemical influence of a fluid, which is certainly a perfect anomaly among chemical agents?

The question is not, whether one hypothesis be utterly absurb, and the other palpably demonstrable, but, rather, which has the greatest weight of evidence in its favour; and which best accords with the phenomena manifested by the function of digestion, with the analogy of the other functions, the laws of life and those of inanimate matter.

Let us observe, then, how our hypothesis accords with the experimental and natural phenomena of digestion.

It reconciles at once the before incompatible experiments of Philip and Brodie, for upon our supposition, it is obviously no longer necessary to maintain, that the nervous influence is necessary to secretion, in order to account for the effect of dividing the nerves of the stomach upon the functions of that organ. It also accounts, satisfactorily, for the *immediate* effect of those experiments which, the reader will recollect, we found altogether inconsistent with the idea, that they merely interrupted the secretion of gastric fluid; and also for the *immediate* influence of emotions of the mind, pain, &c. which may be supposed to counter-excite other parts of the nervous system, and to concentrate its energies, in some intense local action of health or disease.

Our supposition also explains away the anomaly, which the former theory must admit, viz. the existence of unparalelled chemical energy in a fluid, which has nothing remarkable in its sensible properties, or chemical constitution, and which appears to possess none of those principles, which are so remarkable in other (I will not say equal, for there are none, but inferior) chemical agents. But the former hypothesis, presumes not only an unequalled *energy* of action; it necessarily supposes the gastric juice to be a very *general* agent, influencing a greater variety of substances than any other fluid with which we are acquainted. The galvanic principle, however, to which we liken the nervous influence, is capable of conferring a most energetic solvent power upon the most inert fluids, and through their medium of dissevering those substances which are most tenacious of each other, and forcing them into reluctant union with others. The believers in the gastric juice have had so much difficulty in accounting for the general solvent power of this fluid, that some have absurdly presumed the peculiar stimulus of each kind of food to excite the secretion of a peculiar and appropriate kind of gastric juice. Were this true, the stomachs of many persons would, at each meal, be taxed for at least half a score of these distinct solvents.

That the stomach is not irritated by the presence of so powerful a chemical agent, as the gastric juice is supposed to be, has been promptly accounted for, by attributing to it a peculiar sensibility adapted to the nature of this fluid. But how shall we account for its affecting so slightly the organs of taste, or for its comparative inertness when injected into the bladder, as was done by Dorsey.

> "A silver catheter was introduced into the bladder, and to its external extremity was adapted a hog's bladder. About two ounces of gastric liquor from a hog's stomach, were injected into the bladder, through the catheter; the patient declared it gave him no pain but from the catheter having scratched the urethra. A proof that he felt no pain was, that he was unconscious when the fluid entered his bladder. Sometimes, in subsequent experiments, he distinguished it, but most commonly he did not. After remaining about three hours in his bladder he discharged sixteen ounces of fluid, very turbid. The experiment was made at 4 P. M. In the night he had a chill succeeded by a slight fever, but did not attribute it to the injection."

The membrane lining this organ, is delicately sensible to all those chemical agents, which are capable of acting thus rapidly upon alimentary substances, and if the gastric juice is of this character, the vital properties of these organs should no more protect them against its action, than against that of any other active solvent. How shall we account, too, upon the common principles, for the protracted existence of animals in the stomach, in contact with an agent, to the impression of which they are unaccustomed? Leeches have inhabited the stomach for a considerable time with so little inconvenience as to grow to an enormous size. The advocates of the theory of chemical solution have a ready answer, that the powers of life resist its action; but do the powers of life resist the action of analogous chemical fluids? Are the living solids insensible to those agents which almost instantaneously corrode them when dead? Will life protect the skin against the action of nitric or sulphuric acid? or will a leech live and flourish in them, by virtue of his talisman of vitality? So far from it, we know that the weakest of those fluids, which are remarkable for any energy of chemical action, are immediately fatal to all such animals as are not accustomed to their contact.

It appears to me, that our supposition is the only one which can afford an adequate solution of this difficulty. Granting that the gastric fluid is in itself bland, and not possessed of any remarkable chemical properties, but that it is the conductor of something like the galvanic principle, which being under the control of life, is capable of effecting a kind of animal solution of alimentary substances; and we have no longer any difficulty. Upon this supposition, it is obvious that *life* may repel those agents which are rendered active solely by the powers of *life.*

In the essay, I did not attempt to account completely for the erosions of the stomach which are observed occasionally to take place after death. I endeavoured, however, to show, that they were as consistent with the opinions which I advanced, as with those commonly received. I there noticed the fact, that in those cases, in which erosion of the stomach had been observed, the food contained in the organ was found unaffected. I noticed also the inconsistency of the supposition that it is affected by the gastric juice, with other parts of the theory of solution. If it act upon the stomach after death, it is absolute evidence, that it must have accumulated in considerable quantity; a circumstance which, upon the former theory, as we have already shown, is altogether inconsistent with the sudden interruption of digestion, effected by the division of the nerves, and by other causes which disturb their functions.

I presumed, too, that if a certain degree of heat and motion are the only circumstances which aid solution by the gastric juice, and if after death, when these circumstances no longer exist, it produces such remarkable effects, they ought to be unequivocally demonstrable out of the stomach, and not so obscure, as that the ablest chemists and physiologists, as Reaumur, Montegre and Magendie, deny altogether that they take place when it is removed from the organ. It is evident, then, that there is more lost than gained to the advocates of the solvent theory by the admission of the above facts. If, then, I am myself unable to account for them, they are at least equivocal, and neither to be relied upon by one theory nor the other. But if there exists the *neuro-electric* influence, of which I have spoken, we are certainly afforded greater latitude for their explanation. As observed in the essay, we know that many of the organic functions are continued after apparent death. On opening the abdomen of an animal recently killed, we find the peristaltic motion still continued, and as vigorous as during life. If then, the stomach loses its organic life by slow degrees, and if different portions of it successively die, as is the case in every part of the system, it is obvious that, wherever the dead portion is in contact with the living, it will be subjected to the impression of the nervous influence, and if life reluctantly abandons the stomach, as in cases of sudden death in the full vigor of its powers, this effect will take place in a very considerable degree, following the retrocession of life along the blood-vessels and nerves. This explanation accords well with the fact, that these erosions usually occur near the centre of the great arch of the stomach, where it has least vascularity, and where its organic powers may be supposed to be the most feeble; and also with the fact that it usually occurs in circumscribed spots, and does not affect the general surface of the stomach, as we should anticipate from the diffusion of such an agent through the organ.

It may be said, indeed, that the above explanation is inconsistent with facts upon which I myself rely in other parts of my argument, since I have asserted that a much less efficient cause than the complete suspension of the animal functions, as merely an emotion of the mind, may interrupt the office of the gastric nerves. In anticipation of this, I would observe, that in the latter case, the effect is rationally to be attributed to a concentration of the nervous energy in the sensorial functions; but when the organic powers continue to be exercised after the cessation of the animal functions, whatever nervous energy remains is concentrated in the last rallying points of organic life.

The uniformity of structure in the different portions of the mucous membrane, lining the digestive organs, is a circumstance which strongly opposes the idea, that there belongs to that part of it, pertaining to the stomach, a peculiar and remarkable office. It is a principle often employed by Bichat, that similarity of structure indicates similarity of function, and, *vice versa*, that similarity of function indicates sameness of structure. But, surely, if the membrane of the stomach is destined to the secretion of the gastric juice, the most remarkable product of secretion met with in any part of the system, and if the principal office of the intestinal portion be absorption, we have a surprising anomaly in physiology. Ought we not upon this supposition, to detect in the gastric portion of the membrane some peculiar structure, superadded for the performance of this peculiar and remarkable function. The only difference, however, that we can discern between the structure of the membrane of the stomach and that of the intestines is, that the former is of a more delicate tissue, more vascular and nervous, and hence, we should presume *a priori*, qualified to perform the same function with greater energy.

The mucous membranes must be regarded as an exceedingly interesting medium of reciprocal communication between organized and unorganized matter. Through them, animate and inanimate matter are constantly interchanging their elements. For this reason they every where present their free surface to the contact of those substances, which bear an important relation to the organized system; one portion of them, the excretions, having just been rejected by the organs of which they formed a part, and divested of the properties of life; while the other portion, consisting of alimentary substances, is just coming under their control, to constitute a part of the organized system. This is true, not only with regard to that portion of these membranes which lines the alimentary canal, but is also admirably so with regard to that of the lungs. It is now generally admitted that the air inhaled, not only becomes the vehicle which removes recrementitious matters from the blood, but that it also imparts a necessary principle to it, through the medium of the pulmonary membrane.

It has been suggested by a friend, as a circumstance operating against that part of my system, which relates to the absorption of aliment, that, since it is ascertained that nature has provided one route for the passage of pabulum into the mass of the blood, and since she accomplishes her ends by the simplest means, it would be a matter of supererogation to furnish another. Were it satisfactorily ascertained, that the lacteals *do* convey *all the constituent principles* of the blood, and that the route of the thoracic duct is sufficient, under all circumstances, for the performance of the office attributed to it, the objection would present considerable difficulty. But it appears by no means certain, that the different constituent principles of the blood, *can* be elaborated by one chemical process, or further assimilated by one set of vessels. But, as analogy furnishes the above objections, we will resort to it for a reply. The two great classes of organic phenomena are, first, those which are presented in the process of assimilation, or the enduing of aliment with the vital properties of the blood, and second, those which occur in the secerning processes, or the regression of matter from its vital to its physical condition. The functions which constitute the latter class, and which are the least important, we know to be accomplished by a great variety of organs, eliminating different principles from the blood, as the kidnies, the skin, the lungs, &c. &c. Is it not rational, then, to suppose that the constituent principles of the blood are also furnished through different *routes*, and that they receive their specific characters from the peculiar action of the vessels through which they pass?

I would particularly call the attention of my readers to a very beautiful correspondence, which my hypothesis suggests between the extreme arteries and veins, and which certainly reciprocates much in favour of its truth.

All the exhalations and secretions we know to be effected by the extreme arteries, or by vessels continued from arteries, after they have become of imperceptible magnitude. By them the materials of the system are recommitted to the control of physical laws. By the corresponding extreme veins, on the other hand, after being prepared in the stomach, they are taken up and go through precisely the reverse process, viz. assimilation and union with the vital mass. The egress of matter is through the extreme arteries, its ingress through the extreme veins. That the secerned fluids may not, in the descending gradation, bear away with them any of the still necessary principles, they are many of them passed through glandular structures; and that the aliment, in the ascending gradation, may not bear into the circulation any thing too little assimilated, it is made to pass through the liver, which in magnitude is equal to the aggregate of all the other glands in the system.

The analogy may be carried still further without violence. As there are some of the secerned fluids which pass out of the system through no other medium than the exhalant vessels, so there are nutrient fluids, which immediately enter the circulation through the lacteals.

It may still be objected to all which I have advanced on this subject, that the solvent powers of the gastric juice have been by many experimentors demonstrated out of the stomach, and that something like artificial digestion has been often accomplished. I am by no means desirous of concealing the magnitude of this objection; at the same time, I demand equal candor on the part of my readers, in relation to the experiments alluded to. In the essay, I mentioned the circumstances which would appear to render their results equivocal. As we are unable, either to define the precise change which the food undergoes in the stomach, or the properties of chyme, which vary with the varying diet, it is obvious that we have no standard to which these results are to be referred. It is easy to conceive that comminution and maceration of aliments in the fluids of the stomach, at the natural temperature of the body, may effect such a change in their sensible properties, as that they shall resemble some varieties of chyme. It is possible, too, that the adventitious acids, which are very frequently present in the gastric fluids, may, in some instances, have aided the effect, and particularly in the decomposition of bones, for which but a feeble counter-affinity is required.

It would not be at all surprising, therefore, if with these opportunities for self-deception, something of this kind had been effected out of the stomach; particularly if the experiments were undertaken by one already fully persuaded of the truth of what he was only endeavouring to confirm. We know, from a thousand examples, that observations of this kind are exceedingly apt to be fallacious, when the experimentor thus anticipates the result.

But if such an effect from these experiments, even supposing that the gastric juice have no remarkable solvent properties, be not a matter of much surprise, their failure, *granting* the extraordinary chemical powers of fluid, would be one of very great astonishment, and particularly, if undertaken by those who had full confidence in a favorable result.

That these experiments have often failed, under such circumstances, in the hands of the ablest chemists, and without the omission of any circumstance calculated to facilitate them, is well known.

I have sought, in vain, for the original memorial of Montegre on this subject. I must therefore content myself with quoting Magendie's allusion to them, and to those of Reaumur.

> "To establish, incontrovertibly, this point, it has been attempted to produce what has been called, since the time of Reaumur and Spallanzani, *artificial digestion.* For this purpose, after having masticated the food, it has been mixed with the gastric juice, and afterwards exposed in a tube, or other vessel, to the same temperature as that of the stomach. Spallanzani has asserted that they succeeded, and that aliments were reduced to chyme. But since the more recent researches

of M. Montègre, it appears to be shown that this is not the case, but, on the contrary, that the substances employed, did not undergo any alteration, at all analogous to that of chymification, which agrees with the experiments of Reaumur."

If, then, the results of these experiments be abandoned as equivocal by some of the ablest physiologists, and who, nevertheless, labour to prove the chemical solution of aliment in the stomach, it can not be regarded as presumption in me, if, after having adduced other circumstances to weaken their evidence, I also reject them.

The immediate coagulation of milk, by the secretions of the stomach, and by the mucous membrane of this organ, even after being kept for a great length of time, has been regarded as a strong circumstance in favour of the solvent powers of the gastric fluid; but is effectually answered by the fact, stated by Bichat,[*] *that all the mucous surfaces possess this property.*

A circumstance unnoticed in the essay, as favouring the common opinion on this subject, is the supposed discovery of chyle in the intestines. I do not deny that some physiologists[†] have detected a whitish fluid in the stomach and intestines, but they have by no means given sufficient reasons for identifying it with the fluid which is detected in the thoracic duct.

It will be found upon examination, that nearly all the characteristic propreties of chyle are predicated, exclusively, of that fluid which is found in the lacteal vessels, and that there are no facts, or experiments, which warrant the application of that name to the fluids of the stomach or intestines. This has arisen from not regarding sufficiently the assimilating office of the lacteals themselves. We have ample reason to believe that no fluids pass through capillary vessels without change.

The conclusions, then, which I would draw, from the arguments advanced in the essay, and in the present supplement, are:

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[*] General Anatomy, v. 3. p. 82. [†] 2. Hunter, &c.

First, *That there is no fluid secreted by the stomach, possessing the remarkable chemical properties, attributed to the gastric juice, and consequently that chemical solution does not take place in that organ.*

Second, *That there is a neuro-electric, or an electro-animal principle, conveyed by the nerves of the stomach, and made to act upon its contents through the medium of its saline secretions, which possess sufficient animal properties to facilitate its transmission, and to aid the effect.*

Third, *That the aliment in the stomach, thus undergoes what may be termed an animal decomposition, and after being reduced to its elements, is recombined by the principle which controls the composition of animal matter, though not probably endued with any properties of life, till it enters the circulation.*

Fourth, *That a very considerable portion of the aliment is absorbed by the capillary veins of the stomach and intestines, and consequently conveyed through the vena portæ, and the capillary system of the liver, in which route it undergoes still more important changes, and becomes endued with some of the vital properties of the blood.*

Fifth, *That another portion is taken up by the lacteal absorbents, by which it is converted into chyle.*

It may, perhaps, by some, be thought presumptuous in me, thus to attempt the refutation of opinions substantiated by numerous experiments and extended personal observation. If any apology be necessary, for the freedom which I have used in this discussion, I would observe, that whenever a fact is brought forward, for whatever purpose it may have been employed by the discoverer, it at once becomes the property of the literary community, and may be used for any logical purposes. It is generally the case, that experimentors, intent upon some preconceived hypothesis, take but a partial view of the relations which their results bear to the rest of the science. Although they contribute to the completion of the structure, by bringing together the materials which nature has dispersed through her works, the scientific arrangement of them is usually reserved for other hands.

If I may compare small things with great, I would vindicate the course which I have pursued, by observing that nearly all the facts, relating to the circulation of the blood, were demonstrated to Harvey by his predecessors, and that his great merit consisted in drawing from them the correct inferences. It appears to me that a just arrangement of the established facts, in relation to digestion, is at present a greater desideratum than the multiplication of equivocal experiments. The materials are sufficient. The *present* arrangement is certainly incongruous. That a more symmetrical disposition of them has been my *object*, I trust there is no arrogance in avowing; of the success of the *attempt* the public will judge.

Art. II.—*Classification of Anatomy and Physiology.* By N. R. Smith, M. D.

GENERAL ANATOMY.

	ANATOMY.	PHYSIOLOGY.	
	ELEMENTARY TEXTURES.	ELEMENTARY PROPERTIES.	
Chemically Constituted, and Organized.	Cellular Texture	Tenacity,	*Physical and Vital.*
	Osseous	Hardness,	
	Cartilaginous	Elasticity,	
	Fibrous	Flexibility,	
	Muscular	Smoothness,	
	Nervous	Extensibility and	
	Serous	Contract. of Tex.	
	Mucous	Sensibility and	
	Epidermoid	Contract. of Life	

	ELEMENTARY *General Organs.*	ELEMENTARY *General Functions.*	
Resulting from union of Texture.	Blood-vessels,	Circulation,	*Resulting from union of properties.*
	Exhalants,	Exhalation,	
	Nutrients,	Nutrition,	
	Absorbents,	Absorption,	
	Nerves.	Sensation.	

	COMPOUND *Independent Organs.*	COMPOUND *Independent Functions.*	
		Moral & Intellect. Phenom. ——?	
Resulting from union of textures and elementary organs.	Brain,		*Resulting from union of elementary functions and properties.*
	Eye,	Vision,	
	Ear,	Hearing,	
	Palate,	Tasting,	
	Schneiderian Membrane,	Smelling,	
	Skin.	Protection, &c.	

	APPARATUS *Of Associated Organs.*	ASSOCIATIONS *Of Functions.*	
Resulting from associations of distinct organs and textures.	Digestive Apparat.	Digestion,	*Resulting from union of functions and properties.*
	Respiratory ——	Respiration,	
	Secernent ——	Secretion,	
	Locomotive ——	Locomotion,	
	Sexual. ——	Generation.	

Nothing contributes so much to facilitate the acquisition of science, or to render the pursuit of it an intellectual enjoyment, as natural and lucid arrangement. The detail of insolated facts is always tedious and repulsive. It is in their relation to each other, as parts of a system, that they are important and interesting. The teacher who would excite interest in his pupils, must imitate the artist, who with a few strokes of the pencil, pourtrays the outline and general expression of the subject, so that in the filling up, each touch shall produce its effect in relation to the whole.

Classification must ever vary till the science, in which it is employed, becomes fixed upon demonstrable principles. It should always be predicated on our present knowledge. If an ingenious arrangement continue to be employed when, by the accumulation of facts, the materials of the science have become changed, it will retard our advancement. If it be formed in *anticipation* of the progress of our knowledge, it will almost always conduct our inquiries erroneously.

No man has contributed more, in physiology, to the accumulation of facts, or to the scientific arrangement of them, than Bichat. His system, however, with unequalled merits, possesses capital faults. I believe that neither have been justly appreciated. His experimental analysis of the organs into elementary textures, and of the functions into elementary vital properties, lays the true foundation for the prosecution of the science on inductive principles. Even in this, however, there are certain inconsistencies which have diminished the influence which the method employed would otherwise have exercised. It will be recollected that, with the cellular, serous, mucous, fibrous and other textures, which are demonstrably simple, he associates the vascular system of red blood, of black blood, the nutrient, exhalant, absorbent and glandular systems. Any one, at all inquisitive, must, I think, be struck with the incongruity of such an association. Both classes of blood-vessels are obviously compounded, each consisting of three coats as distinct as those composing the stomach or intestines. They retain this compound structure till they become too minute for observation. We have strong analogy, then, for regarding, not only the most minute of the blood-vessels, but the exhalants and the nutrients which are continued from them, and indeed all the circulatory vessels, as compound. Bichat appears to have been led into this error, by the resemblance which they bear to many of the textures, in being generally diffused, not distinguishing between general *organs* and general *textures;* and also by the presumption that these general organs, the exhalants, nutrients, &c. are elementary with respect to the simple textures themselves. This, however, is refining beyond the reach of our senses. Those are to be regarded as distinct and simple textures which, so far as we can discern, are homogeneous in their structure. The vital and physical characters, *demonstrable* in them, do not depend upon the presence of the minute organs, of which we may suppose them composed, although their *formation* may, but are conferred upon the *texture.* But it is not certain even that vessels of *any* description enter the simple tissues. Their presence in them is presumed to account for their formation. May they not, however, be organized from the blood, by the neuro-galvanic influence, which is found to have so much control over the vital functions. If the latter has the least plausibility as a *presumption,* the former is nothing more. That there is some limit of this kind to vascular organization is very certain, for if, for instance, we suppose the cellular tissue to be vascular, we must suppose its elementary *vessels* to be also *vascular*, and so on to infinity.

His most important error, however, and which well illustrates the evil resulting from hypothetical arrangement, is his division of the functions of the individual into animal and organic. There certainly can be no impropriety, when tracing the gradations of life, in designating those functions as *organic,* which constitute a being, as for instance a plant, that has no discriminating perception of surrounding objects; or in denominating those *animal functions*, which, being superadded, establish this last interesting relation. But when, from regarding these classes of functions as distinct in two classes of beings, we attempt accurately to distinguish them in an *individual,* we are involved in difficulty, for the latter are so engrafted upon the former, and the two hold such intimate intercourse through important common organs, that we cannot discover any natural demarcation, nor determine what degree, or kind of influence, one exerts over the other. This feature of Bichat's classification was predicated on an anatomical and physiological distinction, between the sympathetic and cerebral systems, which has since been shown to be hypothetical. We have already observed that classification should, unless professedly artificial, be founded only on established principles, for we employ it merely for the purpose of embodying our facts, and by no means to conduct our investigations, since such an order would be altogether inconsistent with *inductive* inquiry.

Neither is there a proper symmetry between the two primitive classes of this author. I mean, 1st, the functions relating to the individual, and 2d, those which are necessary to the species. The whole of the latter class is not of greater magnitude and interest than some of the subdivisions of the former. It is furthermore objectionable as being unnecessary. No perplexity need arise from considering the function of generation as belonging to the individual."

Another objection to the above classification is its being so minutely and speculatively ramified, that, instead of presenting to the student at one view, a clear outline of the *subject,* it is itself a source of perplexity.

It will be seen that, in the foregoing table, I have endeavoured to embrace the excellencies of Bichat's classification, whilst I reject so many of its principles, deemed erroneous, as to give it almost entirely a new aspect. It has been my object to carry through the whole science the anatomical and physiological climax of composition, which is suggested by his elementary textures and elementary properties.

With regard to the distinction of elementary textures, I would observe, that Bichat's system has been criticised by many who have not appeared to understand the principle upon which it was founded. It was not his object to resolve every part of body into the ultimate constituent principles, to which they may perhaps be reduced by maceration and other mechanical means; but to designate those as elementary, in relation to the organs, which are, in their *natural state,* characterized by peculiar physical and vital properties, and which are uniform in their appearances and offices in every part of the system. Thus, the serous membranes may be resolved into cellular tissue, but they are strongly characterized by peculiar properties, which are conferred upon this particular condition of that tissue, and are to be regarded as distinct. The same may be said of the bones. They have erred, therefore, who have endeavoured to reduce the simple textures of Bichat to the number of three or four. There are some, however, which may with propriety be rejected as mere *varieties* of other textures, as for instance the medullary, the pilous, &c. Certain compound textures as the fibro-cartilaginous, in which the properties of the constituents are not changed but merely modified, need not be treated of distinctly.

It will be seen, that, in my arrangement, the blood-vessels, absorbents, nerves, &c. with their functions, constitute a class by themselves. The name which is conferred upon them expresses the reason for this disposition. They are compound, and they are general, all of them entering into the composition of most organs, and some of them supposed to be essential to all. The functions which they perform are general, and for the most part, common to all the compound organs. Although I would in the first class, treat of the nervous *texture*, yet the *nerves* are to be regarded as elementary organs, bearing a relation to the system, corresponding to that of the blood-vessels, &c. They are also compound and divisible into nervous and cellular textures.

The next class consists of compound independent organs, and their corresponding functions. It cannot be supposed that I would mean absolutely independent, but merely that each one of these organs completes its function singly, without the aid of subsidiary organs. Of course they are connected with the system, through the medium of the elementary general organs, of which, and of simple textures, they are compounded. The phrase which I use to designate this class, will be better understood when regarded in contradistinction to that by which I denominate the fourth and last class. In this it is obvious that several distinct organs contribute their several functions to one common function. I therefore denominate the association of these organs an apparatus, and the result of their united offices an association of functions.

It appears to me that the facility and the interest with which anatomy and physiology might be studied, are much diminished by the unnatural separation of these two parts of the science, which at present prevails. The structure of an organ is only interesting in relation to its function, and its function is only intelligible by reference to its structure. The plan which I have pursued, it will be seen, recognises this principle.

ART. III.—*Observations on the use of the Artemisia Vulgaris, in the treatment of Epilepsy.*

DR. BURDACH,* a few years ago, directed the attention of the profession to the *rad. artemisiæ vulgaris,* as an exceedingly effectual remedy in epilepsy. Since his first publication on this subject he has had considerable experience with this article in the treatment of this affection, and has found that, although not so universally applicable as he at first believed, it is a remedy of great and prompt efficacy in some varieties of this distressing malady. In those cases of epilepsy which occur in young male persons between the ages of seventeen and twenty, the result of too rapid process of corporeal evolution, he has found this remedy not only useless, but in most instances manifestly injurious. Some cases, however, even of this character, he succeeded in removing; and he observes that one or at most two doses of the medicine should be tried in cases of this kind; for it is a remarkable circumstance, he says, that in almost all cases of epilepsy in which the *artemisia* has been found successful, an evident amendment of the disease occurred from the first dose. If in any case of epilepsy there be not a manifest improvement effected by the first, or at furthest, the second dose of the medicine, no benefit can in general be expected from continuing its use. Dr. Burdach states, that so far as his observations extend, the same objections do not exist to the employment of this remedy in cases of epilepsy occurring in young *females* about the age of puberty, as in males. In general he found this medicine more frequently successful with females than males, the instances cured of the former being to those of the latter sex, as three is to two. He has not as yet been able to deduce from experience any definite indications for the employment of the artemisia.

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* Hufeland's Journal of Practical Medicine, December, 1824.

He has found it occasionally promptly successful in very obstinate cases, while in other instances apparently perfectly similar, not the least advantage was obtained from it. In general, however, the more recent the first attack of the disease has been, the more certainly will the remedy act beneficially. Dr. Wagner, of *Schlieben*, also, has published observations which go to confirm the favourable account given by Dr. Burdach, of the effects of this remedy in epilepsy. He relates the following case:

Francis F. aged thirteen years, about three years ago received a blow on one of his temples with the open hand. He was soon afterwards seized with a paroxysm of epilepsy, which at first returned at rather remote intervals, but became more and more frequent until the paroxysm at last recurred from six to eighteen times daily. The patient became gloomy and stupid. A great variety of means were employed to free him from his terrific complaint, but without the least advantage. Finally, Dr. Wagner, seeing Dr. Burdach's statement of the efficacy of the root of the artemisia vulgaris in this complaint, determined to give it a trial in this instance. He accordingly administered a dose of this medicine late in the evening; and the patient had only three paroxysms during that night, after the last of which, he fell into a sound sleep, which continued until late in the following morning. On visiting the patient next day, he found him in the most profuse perspiration: and so excessively fœtid was the sweat, that the air of the room was almost insupportable. During this day he had no epileptic fit. In the evening the *artemisia* was again given, and the patient suffered but one paroxysm during the ensuing night. The perspiration was again copious and fœtid, though in a less degree than during the preceding night. No paroxysm on the succeeding day. A third dose was administered on the evening of this day; and the patient remained entirely free from his disease during the night. The sweat was again copious, but unattended with any disagreeable smell. The remedy was now discontinued, and the patient has ever since remained perfectly free from epileptic symptoms.

The *artemisia vulgaris,* is by no means a new remedy in epilepsy. Dr. Stoll has collected a number of passages from various writers, in which this article is mentioned as a remedy in this disease. This writer says, that he has known the root of this plant used, more than twenty years ago, as a domestic remedy against epilepsy; though he did not then pay any attention to it.

Ehmuller says, in his Oper. Med. Edit. 1696, p. i. fol. 519; "Notum est quod circa festum sancti Johannis Baptistæ sub radice hujus (artemisiæ rubræ) *carbones* reperiuntur, multæ laudis in *epilepsia.*" Hi carbones, says Simon Pauli, non sunt fabula uti Hoffmannus voluit sed nihil aliud quam radices artemisiæ annosæ demortuæ et ita exsiccatæ atque nigricantes, alcali ad huc refertæ, quæ in epilepsia re vera juvant. Semper quidem anile figmentum putavi: novi tamen non solum mulierem militarem hujus loci, quæ hosce carbones, propriies infantibus epilepticis cum fructa propinavit; sed et *Joel,* in Praxi, c. de epilepsia commendavit, vir alias minus superstitiosus.

Zwinger, an author who was much esteemed in his day, speaking of this plant, says: *mire in epilepsia valet.*

Dr. Burdach says, that care should be taken in pulverizing this root, to separate the internal ligneous parts from the external or cortical, which latter is the only medicinal part of the plant. The dose is from thirty to forty grains for an adult, once a day. The artemisia vulgaris is indigenous to our own country, and is known under the familiar name of *mugwort.*

Art. IV.—*Observations on Fractures of the Femur, with an account of a new Splint,* by Nathan Smith, M. D. C. S. M. S. Lond. Prof. of Surgery, &c. in Yale College.

In the treatment of fractures, the first object is to place the extremities of the fractured bone in accurate apposition. In general, this is accomplished without difficulty. It sometimes, however, happens that the muscles are so contused, or otherwise irritated, as to become morbidly rigid, and to resist a considerable degree of force although the limb be placed in the most favourable position for the reduction. Under these circumstances, it is with some difficulty that the fractured surfaces are brought in contact with each other. If the position of the limb be injudicious in relation to the action of the muscles, or if the force be suddenly and unequally applied, the difficulty is often insuperable. When, however, the contraction has been overcome by the necessary degree of extension, if the fracture is at all oblique, the muscles will repeat the displacement, as soon as the extending force is discontinued; consequently there is indicated the employment of a permanently extending force, a remedy which, from the difficulty that attends the employment of it, and from the want of tact in adjusting it, is exceedingly equivocal in its results, often defeating its own object, with regard to the limb, and occasioning a great deal of suffering to the patient.

The principal difficulty, then, in the treatment of fractures, is not in the manual operation of reducing the bones to their places, but in keeping them accurately there till union can be effected. This difficulty, however, does not altogether consist in the liability of the limb to be shortened by the contraction of the muscles, but also in the tendency which there is to the other kinds of displacement. The limb, below the fracture, may assume such a position, that the axis of the inferior fragment may not coincide with that of the superior, but may make an angle with it; or the limb may rotate, so that the fractured surfaces shall not correspond. This often occurs in fractures of the thigh, from not properly supporting the foot, which, acting transversely upon the axis of the limb, operates like a lever to rotate it. Or, finally, there may be a displacement of the fractured extremities laterally, occasioned by the unequal action of the muscles, or by the limb not being equally supported.

The liability to these kinds of displacement and consequent deformity will depend, in a great measure, upon the length and weight of the limb below the fracture. It is obvious that the greater the length, the more power will the weight of the extremity have to bend the limb, and the less apt will the portion below the fracture be, to accompany the part above in those motions which it is impossible to avoid. The nature of the difficulty, in these cases, should indicate the means which are best calculated to remedy it, and hence it is obvious that the most important indication is to employ such an apparatus as shall command the whole limb, so that the part below the fracture shall preserve its proper range with that above, and in the different motions which may be necessary, that the whole shall move as one, the fragments maintaining their relative position in all respects.

Another important circumstance to be attended to is the attitude of the fractured limb, which should be such that, as much as possible, the antagonizing efforts of the flexor and extensor muscles may be made to balance each other. From the neglect of this circumstance, almost every kind of evil to the limb is liable to occur; the muscles will exert an unequal force laterally, tending to lateral displacement, the contractile force to be overcome must necessarily be greater, the application of the extending force can not be made in the direction of the axis of the broken bone, and in addition to all these, the ease and comfort of the patient, so necessary to the healthy process of union, are greatly impaired.

Another object to be attained, is so to contrive the apparatus that the patient may be moved from place to place, or taken from one bed and laid upon another, without injuring the limb, or retarding the cure; for it is no small penalty to be confined on the back for forty or fifty days.

The above are the principal indications to be kept in view. But while we attend to them, there are certain injurious circumstances to be avoided, or obviated, which might frustrate our intentions, or give the patient unnecessary pain and inconvenience. The most important of these is injurious pressure. This is often produced in two ways; and first, by the weight of the limb resting upon a small part of its under surface. This cannot be continued for any length of time, even although it rest upon a cushioned support, without producing injurious effects. The softness of the support is too often a circumstance which deceives the surgeon. A little reflection, however, must convince every one that, if the weight of the limb rest upon an inch square of surface, the effect will be the same whether it rest upon eider-down or adamant, provided the surface of the latter be accurately adapted to that of the limb. To obviate this difficulty and source of injury, the support upon which the limb rests, whatever it may be, should be so adapted to the whole under surface of the limb, as to divide the pressure as equally as possible throughout every part of it. If this be done, it will make no difference whether the support be hard or soft, the benefit of soft substances as an easy support, consisting entirely in their receiving the weight upon a greater surface, and thus dividing the pressure more equally.

The other kind of injurious pressure, which is often, I may even say generally produced upon fractured limbs, is occasioned by the application of splints and bandages immediately to the neighbourhood of the fracture, with a view to keeping the extremities in place by means of lateral pressure. This occasions injury by the partial contact of the narrow or flat splints bound tightly to the limb, and which, notwithstanding the compresses which are interposed, gall and chafe it in particular places. The circular bandage, by making pressure entirely around the limb, intercepts the returning blood in the veins, and causes the limb to swell below the bandage; or if the limb be equally bandaged throughout, impedes the healing process to which a free circulation is necessary, or irritates the soft parts by pressing them upon the fractured extremities, and not unfrequently, by the inflammation and ulceration which is produced, converts simple fractures into compound.

This kind of pressure is employed from a mistaken notion, which prevails too generally, that such bandaging and partial bracing of the limb contribute much to keep the bone in place. If surgeons, who are in the practice of applying bandages tightly around fractured limbs, would take the trouble to investigate the subject, I think they would perceive that such practice can do nothing but mischief. They can not be applied sufficiently tight to prevent the shortening of the muscles without interrupting the circulation, and it is doubtful whether *any* degree of tightness would aid in the least, to effect this object; nor can they contribute at all to prevent displacement of the extremities, if the limb below the fracture is moved from its proper position, or if the limb above the fracture is, by the motions of the body, moved out of its relative and natural position. If, in a case of compound fracture, in which the ends of the bones are in sight, or in which they can be touched by the finger, the surgeon will take hold of the limb below the fracture, while he keeps his finger on the fractured ends of the bone; he will find that, by moving the limb into its proper relative situation with the limb above the fracture, the bones will readily come into apposition; but if he attempts to bring the ends of the bones into apposition by pressing them down with his fingers, he will find it utterly impossible to do it, with any force, unless he move the limb below the fracture with the other hand. The weight of the limb is acting against him at the end of a lever which gives it an infinite advantage. For this reason no pressure which the limb can bear without destruction, will prevent the ends of the bones from being displaced, if the limb is moved out of its proper position. This mistaken idea of the utility of bandages in maintaining the natural form of the limb, and the necessity of them to attach the splints which are commonly used, has led to an unremitted employment of them, which could not fail to be exceedingly injurious, even were they capable for a time of effecting the objects for which they are intended. It is too generally presumed that, when a fractured limb has been once dressed, or set, as it is vulgarly expressed, it must remain perfectly fixed till the bones have united; and as it receives its support from the splints which are commonly employed chiefly through the medium of the bandages, there is generally a great unwillingness to relax the support by loosening them; nor indeed can it be done, as the apparatus is usually applied, without occasioning more or less displacement. There is often, however, a more insidious and much more fatal mischief resulting from this apprehension of relaxing the supports of the limb. The unreasonable fear of unbinding it thus enveloped as it is in the dressings, for the purpose of noticing its condition, is a timidity which has proved the destruction of many limbs and some lives, and almost always occasions excruciating torment to the patient. It is rare that bandages encircling the limb are not, either at first applied too tightly, or become so, soon after their application, by the swelling of the limb. To the surgeon a part of the dressings may appear sufficiently loose, while by the unequal swelling of the limb, other parts may occasion and conceal a great deal of mischief.

It is unnecessary that I should speak of the great variety of methods which have been employed to maintain the reduction of fractures of the thigh, in order to point out in them the deficiencies which I have spoken of above. Observation and reflection will, as I think, convince every one that the difficulties which I have enumerated are completely obviated by none of them, and that they are for the most part deficient in the general principles which govern their application. I would particularly, however, call the attention of my readers to that which

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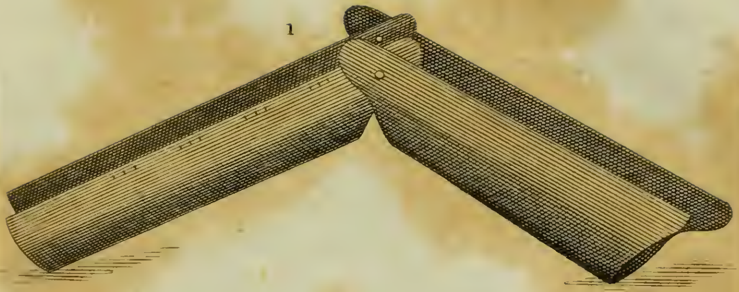

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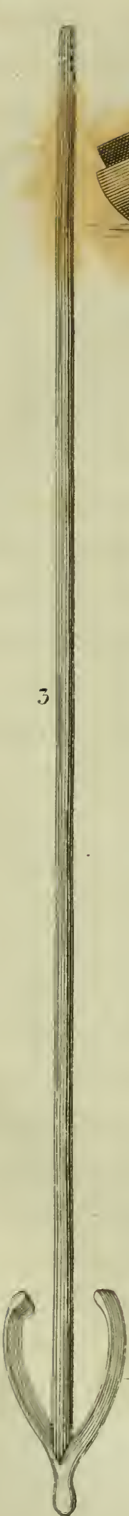

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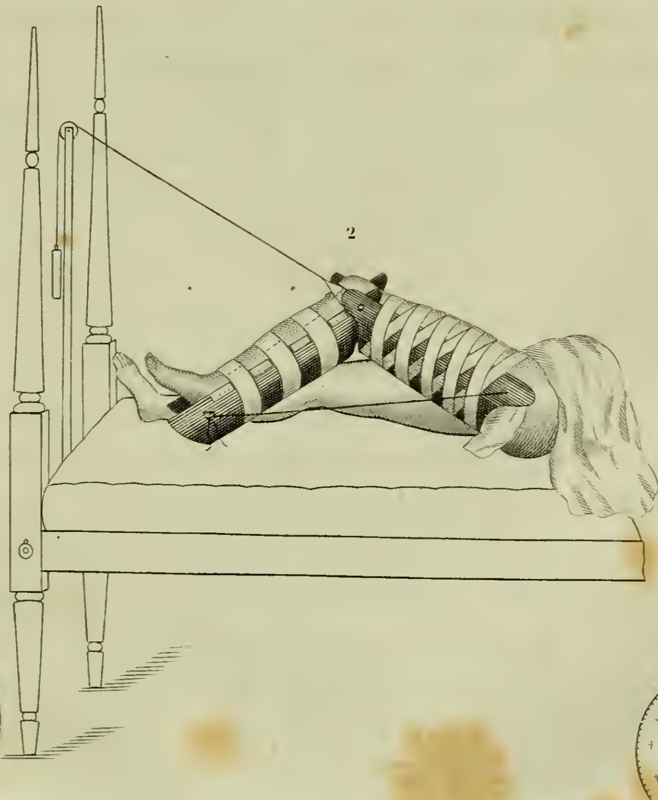

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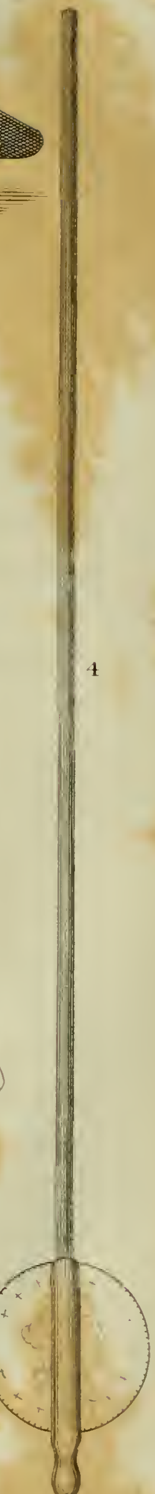

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is now used almost exclusively by scientific surgeons, and which, with its modifications, appears to be regarded, though acknowledged very often to fail, as the *ne plus ultra* of inventions for this particular purpose. I mean the method of Desault. This is so familiarly known that I will not attempt to describe it minutely. The principal object, which this apparatus is intended to effect, is permanent extension. One long splint is essential to it. This, in the original apparatus of Desault, was a flat piece of wood applied by bandages to the outside of the limb, with compresses intervening, extending above the hip and below the foot. Oblique bands were cast between the thighs and over the extremity of the splint, which thus effected the counter extension, while extension was made by passing bands from the ancle and foot to the lower extremity. Short splints were also bandaged to the thigh, and the whole was closely enveloped in dressings. The patient was of course confined to his back, and the limb was made to rest upon cushions throughout its whole length. The above apparatus has been ingeniously modified by Drs. Physick and Hartshorne. The former gentleman extended the superior extremity of the long splint to the axilla, in the form of a crutch, with a view to relieving the perineum from the galling pressure of the counter-extending band; the latter, by employing two long splints, divided the resistance more equally around the base of the limb.

The first objection, which occurs to every variety of this apparatus, is the attitude of the limb, by which an unequal degree of tension is produced in the flexors and extensors. It is obvious that, when the thigh is extended upon the pelvis, and the leg upon the thigh, all the extensors have their utmost degree of relaxation, while the flexors have a corresponding degree of tension. It is said, indeed, that, although this posture is at first painful to the patient as being unusual, yet, when the extension has been continued for a time, the contraction of the muscles is overcome and he ceases to complain. This, however, is only an evidence of what mechanical force can effect, and that the muscles, after the extension has been continued for some time, become paralysed, and their sensibility obtunded. It does not prove that the two classes of muscles, which are thus unequally stretched, exert an equal degree of force obliquely upon the bone; for although their vital contractility may be suspended, we know that the contractility of texture increases with the increased degree of extension, so that although the sensations of the patient do not indicate it, yet it is absolutely certain that an effort is constantly making by the muscles to displace laterally the bones to which they are attached. It is obvious, also, that a greater degree of force will be necessary to give the limb its natural length, than if the muscles are in harmonious relation with each other.

A little reflection must also convince us that, under these circumstances, it is impossible to make the extension precisely in the direction of the axis of the thigh bone, for the force which is applied to the limb below the fracture, is communicated to the part which is above, wholly through the medium of the muscles, and this will chiefly be done by those which are the most tense. These will be drawn into the line of direction, in which the force acts, while the bone, not being equally supported on the opposite side, will be crowded from it. The more nearly the muscles antagonise each other, the more nearly will the extension be made in the direction of the axis of the bone, and *vice versa*.

Another objection to this apparatus is, that the support which it receives from beneath, although it rest upon cushions, is, for reasons mentioned above, necessarily confined to a small part of the surface, and must occasion pressure more or less injurious. Another great inconvenience to the limb and to the patient arises from the support not constituting a part of the apparatus attached to the limb, and consequently not moving with it, in the different unavoidable motions.

The remarks, which were made upon the pressure of flat, straight splints, and circular bandages, are applicable to this method.

The apparatus which I have used for several years past was designed to answer the general indications of which I have spoken, and was the result of long experience of the difficulties which attend the treatment of fractures generally, and particularly those of the thigh. It consists of two thin broad pieces of wood* so warped as that the concavity of one shall correspond to the convexity of the under surface of the thigh, and the other to that of the leg. The lower extremity of the thigh piece and the upper extremity of that of the leg, are jointed together. This is done by paring out the margin of each of them, in the middle, so as to make them deeply concave. The projecting corners of the extremities, which are thus produced, are applied to each other, so that those of the thigh piece embrace and overlap those of the leg piece, and each pair being fastened together by a pin, performing the office of a pivot, a perfect hinge is produced, which admits of no other motion but flexion and extension. The superior margin of the thigh piece is then pared away, so as to adapt it to the shape of the pelvis against which its circumference rests. Where it presses upon the pubis and the tuber of the ischium, as it may be made to do, it should be bordered with soft leather, and stuffed. The leg piece is to be made longer and larger than the leg, and as its concavity can not be exactly adapted to the convexity of the calf of the leg, this part of the limb is to be slung in the splint, by means of strips of cloth, or leather, which pass across it and hang loosely into its concavity, being attached to one side of the splint by tacks, and on the other by hooks or buckles, which will admit of their being tightened or loosened, as may be necessary, without disturbing the limb. The circumference of the thigh piece is to be a little less at the inferior than at the superior extremity, to adapt it to the tapering shape of the limb. A strap, passing from the upper extremity of the thigh piece, to the lower extremity of that of the leg, will enable the surgeon to fix it at any angle that he pleases.

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* Bass is that which I have employed, as being more flexible, and less liable to split than almost any other.

In applying it, there may be laid along under the whole splint bands of firm cloth, long enough to embrace the splint and the limb. A broad linen cloth may be laid in the thigh piece. The limb is then to be carefully laid in the splint, the size of the one having been adapted to that of the other by measuring the sound limb; the linen cloth may be folded over the limb, and the whole splint then secured to it by overlapping and pinning the bands along its whole length from the hip to the ancle. As the pieces of the splint are flexible, they will be made by the bands to embrace the limb firmly enough, although they may not have been precisely adapted in size. In most instances, in which the limb has been thus dressed, almost every source of irritation being avoided, and the attitude natural and easy to the muscles, I have not found it necessary to use permanent extension. I am confident that the necessity for its use is often occasioned by the apparatus itself which is employed to effect it. Where, however, the fracture is very oblique, and the muscles are disposed to contract and shorten the limb, I have employed a mode of extension, which can be graduated to any degree of force, and which may always be made in the direction of the axis of the thigh bone. It is accomplished by lacing a soft band of leather round the leg, just below the knee, and to this attaching a cord, which is carried in the direction of the bone over a pully in a stand nailed to the foot of the bed, and which may be lowered or raised at pleasure. To the end of the cord is attached a weight, equal to the necessity of the case. The weight of the body makes the counter-extension, which may be increased, if necessary, by raising a little the foot of the bed.

The reader will readily perceive that, by this apparatus, all the indications which I have spoken of above are intended to be answered. The limb may be placed at any angle, which the muscles may require, without at all disturbing the fracture. It is completely protected from hurtful pressure, as it rests upon the whole surface of its semi-circumference, and as it is no where girt by bandages, being protected from their unequal pressure by the splint, suffering them to touch it only on its upper surface. Along the angles of the splint and bandage, there is no pressure at all, so that the blood returns with perfect freedom. The weight of the leg being perfectly commanded by the lower piece, and the limb easily fixed in any position, its control over the fractured extremities is completely obviated. The splint being light, and the whole of it attached to the limb, and the support being the splint itself, there is no difficulty in moving the whole limb as one, or in transferring the patient from one bed to another. The bandages may be at any time relaxed without the least danger of disturbing the fracture, they being only necessary to secure the limb when it or the body moves. It is to be particularly noticed, as one of the excellencies of this method, that the weight of the limb itself, and the reaction of the hollow splint in which it is lodged, constitute all the force, which, under ordinary circumstances, is necessary to maintain the reduction. It is particularly adapted to compound fractures, which may be examined and dressed without in the least disturbing the limb, and even although the wound be on the under surface, by cutting away a portion of the splint opposite to it. The few words which are necessary to describe this splint, are a sufficient evidence of its simplicity, almost any person can construct it in a very short time. The objections of complication and expense, therefore, which prevent the general use of some others can not be made to this. I do not, however, rely solely upon the theoretical principles which indicate its use. Its present form is the result of twenty years extensive experience in the employment of some modification of it, and I never have seen sufficient reason to induce me to abandon it for any other.

The reader will have no difficulty in forming an idea of the splint and its appendages, by attending to the plate.

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We are confident, that our readers will be highly gratified with the above account of professor Smith's apparatus for fractured thigh. We regard it as the most valuable paper, on the subject of fractures, which we have for a long time seen. The principles which govern its application are philosophical, ingenious and practical, evidently the result of nice observation and professional tact. We do not hesitate to express our confidence, that it will eventually become generally used. We only regret that an account of it has not been earlier given to the public. Dr. Smith will, for our next number, communicate an article on fractures of the leg.

This distinguished and original practitioner, from an almost unequalled experience in the practice of surgery, has accumulated a fund of original observations, which have not yet been communicated to the public but through his lectures. We are happy to announce that, hereafter, probably every number of our journal will be enriched with something from his pen. E.

ART. VI.—*Cases of fractured skull attended with extraordinary circumstances, successfully treated.* By CHARLES HALL, M. D. of St. Albans, Vt. communicated in a letter to one of the editors.

CASE 1st. The patient was a lad thirteen years of age, to whom I was called, in the town of Fletcher. The skull had been extensively fractured by the limb of a falling tree. The blow was received a little on the right of the crown of the head. Its force appeared to have been directed obliquely forward, as the integuments were lacerated in that direction, and the central portions of the parietal bones so fractured and depressed, as to leave their anterior portions elevated nearly an inch, so that the finger could be inserted beneath. The wound had bled freely. I did not see him till twenty-three hours had elapsed from the time of the injury. He had not been for any time deprived of reason or perception. Occasionally, however, he seemed inclined to doze. He had vomited several times. Upon examination, I found the wounded integuments inflamed, swollen and very sensible. I divided them sufficiently to obtain free access to the bone. The fractured portions were so interlocked with the sound bone, that I found it impossible to remove or elevate them without employing the triphine. When this was done, and I had removed several fragments, I discovered that a portion an inch in length and half an inch wide, had been driven, together with a small piece of wood, through the dura-mater into the substance of the brain. These also I removed. The bleeding from the lacerated sinus was free. During the operation and after it, the patient continued perfectly to enjoy his senses, but what is most wonderful, he recovered without one unfavourable symptom. Dr. Hall of Fairfax, who attended him, informs me that the brain protruded through the opening in the dura-mater, but the integuments immediately closed over it, and the lad has since perfectly recovered.

Case 2d. The patient in this case was a man forty years of age, living in the town of Franklin. The injury was inflicted by a staging pole falling across the side of his head. He vomited once after the injury, and stupor immediately supervened. On the fourth day, when I was called to visit him, I found him still in a lethargic state. He could, however, sometimes be roused to answer questions, and occasionally raised his hand to his head. His breathing was somewhat laborious; bowels torpid. There was no wound of the skin or tumefaction of the integuments. After consultation I laid the skull bare to a considerable extent; found no fracture nor depression, and the integuments appeared to have been but slightly bruised. The pericranium was *no where detached*, and its vessels *bled freely* when cut. I applied the triphine where the integuments appeared to have been most bruised, and perforated the parietal bone on the left side, embracing a portion of the coronal suture. On removing the piece the blood flowed freely out, and on examining with a probe, I found the dura-mater detached to a great extent, and of a dark colour like that of an ecchymosis. The patient has since been bled freely and often, and, as I am informed, is recovering. The interesting feature in this case is the fact, that the dura-mater was detached from the cranium, while the pericranium was undisturbed.

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Dr. Hall will accept our thanks for the above cases. We regard them as interesting and instructive, the former as illustrating the degree of injury which may be sustained without injury to the intellectual functions, and without a fatal result; the latter as demonstrating the fallibility of the criterion which is relied upon, as indicating the condition of the dura-mater. Mr. Abernethy and others inform us, that if the pericranium be firmly attached, and particularly if hæmorrhage occur on detaching it, we may safely conclude that the dura-mater is undisturbed. Ed.

Art. VII.—*Cases illustrating the reproduction of bones; and a recent case of amputation of the lower jaw, with observations on the propriety of repeating similar observations without previously securing the carotid arteries.*

By Geo. M'Clellan, M. D. Professor of Surgery in the Medical Department of Jefferson College.

The readers of this journal will probably recollect that the history of a case of amputation of the lower jaw, was published in the number for June, 1824. Since that period I have repeatedly been applied to, either personally or through the medium of letters directed to me from remote parts of the country, for further information upon the same subject. Among several other less interesting objects of inquiry, my attention has been particularly called to the two following considerations: first, the reproduction of bony matter; and second, the propriety of repeating a similar operation, without previously securing the carotid arteries. As the history of some other cases which have occurred to me, and have not hitherto been published, will serve to illustrate these considerations more forcibly than any thing else I can advance, I will briefly detail them, together with some accompanying observations.

About two years ago, I was called in consultation by my friend Dr. Eberle, to the house of a Mr. Middleton in Race-street, to visit a female patient three years old. The little patient had been afflicted, for several months previous, with a horrible ulceration of the gums and cheeks, which Dr. Eberle had succeeded in arresting, by the administration of muriate of gold and cicuta. The whole inferior maxillary bone, however, was left in a state of necrosis; and the surrounding soft parts had been so completely detached from it, that its size alone prevented it from being extracted from the mouth. By pushing the lower lip downwards we could readily expose the whole front of the jaw, which was soon divided at the symphysis by a metacarpal saw. The two halves were then extracted entire, with the exception of one of the condyles, which was the only portion of the bone that remained sound. The cavity was afterwards stuffed with pledgits of patent lint, to prevent a collapse of the cheeks; and the chin was lightly supported by a few turns of the head bandage. In the course of a few days, the granulations, which sprouted up so abundantly as to fill the whole cavity previously occupied by the dead bone, were completely cicatrized over by an extension of the mucous membrane from each side, and the patient was, of course, dismissed from all further treatment.

I had almost forgotten the particulars of this case until a few weeks ago, when I was called by another medical friend to the lower part of Southwark, in consultation upon the case of a relative of the same family. I had hardly entered the house before I was accosted by the mother, who expressed her surprise that I did not recognise the little girl who stood before me, as the "old patient," from whom the jaw-bone had been "cut out." Indeed, on the first examination, it was difficult for me to be convinced of the truth, notwithstanding the positive assertions of the mother. The countenance appeared so natural, and the motions of the chin and lips were so perfect, that no one unacquainted with the history of the case could suppose that any part of the bone had ever been removed. To the sense of touch also, the parts presented a firm and well defined bony resistance; and I was assured that the child could masticate her food and articulate her words with great ease and perfection. On looking into the mouth, however, I discovered that the lower jaw was entirely destitute of teeth, the place of which was occupied by an indurated cicatrix of the firmness of cartilage; and on inspecting the conformation of the new bone a little more carefully, the angles were found to be deficient, or rounded off like those of a new-born child. The mental protuberance was also much less prominent than natural; and the shape of the whole mass was that of a bent cylinder, instead of an irregularly constructed bone.

I presume that this case will be received as decisive evidence in favour of the probability of a reproduction of osseous matter, after the removal of almost any bone. Several cases of a similar kind, although not attended with so extensive a destruction of the bone, have occurred to other practitioners. A very interesting one is reported by J. B. Whitridge, M. D. in Doctor Mann's Medical Sketches, in which nearly one half of the same bone was extracted in a necrosed state from the abuse of calomel,* in the case of a young soldier, on the northern frontiers, during the late war. A restoration of the lost substance afterwards took place, and the patient was left with a useful jaw.

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* From repeated observation I have long since been persuaded that calomel is too often charged with the production of necrosis of the jaw-bones. I am by no means prepared to assert that it does not frequently produce this

A case very similar to the one I have related, is described and figured by Decker,† in which full two-thirds of the same bone was taken away. "Ultra dimidiam maxillæ inferioris partem valde cariosam nigram levi cum hemorrhagia ipse chirurgus perterritus omnium summi cum admiratione extraxit, ex quo præter omnium expectationum curatus fuit miser hic et ab omnibus jam derelictus puer." Whether or not it will be inferred from the words "*curatus fuit*," that there was an entire reproduction of bone in this case, I am by no means confident, but it is very certain that without such a reproduction, the boy, notwithstanding the skill of his affrighted surgeon, would still have been "*miser hic at ab omnibus jam derelictus.*"

Other cases are also described in the fourteenth volume of the "*Mémoires de l'Académie Royale de Chirurgie,*" for the year 1774. One is reported as having occurred to M. le Guernery in 1729, in which a necrosed piece, extending from above the right angle to the interspace between the first and second molar teeth on the opposite side, was extracted entire. It appears that M. le Guernery himself did not sus-

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disease, but I have seen several cases in which there was at least no reason to believe that any censure should have been attached to the administration of that remedy. In two cases of scrofulous ophthalmia, where no preparation of mercury whatever had been employed, after the subsidence of the inflammation, and the consequent cicatrization of the pustules on the cornea, an extensive necrosis of the superior maxillary bones took place. Aphthous ulcerations of the gums are also occasionally followed by exfoliations from the bones; and diseased teeth frequently induce a mortification of large portions of the jaw in which thev are inserted. Necrosis of the long bones, which nobody thinks of ascribing to the use of mercury, differs from the same disease in the jaws, only on account of the sequestrum into which, in the former situation, the diseased part is converted.

† *Vide.* Exercitationes Practicæ Auctore Fred. Decker, p. 582. An. 1695.

pect that the jaw could have been reproduced in this case; but, from his description of the ease with which the patient could open and shut her mouth, use her tongue, and perform the natural motions of her countenance, his commentator, M. Bordenave, concludes that there must have been a reproduction of the lost portion of the bone. “*Cette dernier observation sembleroit prouver qu'il y a eu réparation de la substance osseuse par des sucs auxquels le perioste auroit servi de moule et dont il a pu fournir une partie.*” p. 156.

Two cases are also reported in the same memoir, on the authority of M. Belmain and M. Raygerus, in which even larger portions of necrosed bone were extracted from the mouth; but, on account of the great age of the patients (one being seventy and the other eighty years old) no reproduction of osseous matter followed. Another case, however, was communicated to the academy by Mr. Else of London, on the authority of “*M. Walker Chirurgien en Amerique,*” in which after the loss of both sides of the jaw from the very condyles down to the sides of the chin, the young negro enjoyed good health, and was enabled to masticate without difficulty.

My friend Dr. N. R. Smith, now of this city, has related to me a very interesting case, of the same nature, although not occurring in place of the same bone, on the authority of professor Mussey of New Hampshire. As a full account of it will no doubt be shortly published by the intelligent surgeon under whose observation it occurred, I can only state that the scapula was partially regenerated, after having been torn out from the body by the action of a piece of machinery into which the patient had accidentally fallen. This case is very similar to the celebrated one of Chopart, in which the same bone was partially reproduced after having been entirely destroyed by a necrosis.

A very interesting case, also, occurred to me, last spring, in the person of a young man from Lancaster county, whose metacarpal bone for the left index finger had been entirely destroyed, with the exception of its condyle alone, by a slow caries. The place of the shaft of this bone was occupied by a scrofulous abscess, which was confined so tensely by the periosteum, as to assume the appearance of an encysted tumour. After the use of a few moxas, and an appropriate constitutional regimen, the abscess was laid open, and the curd-like scrofulous matter evacuated. The cavity soon afterwards became filled with granulations, and closed by a cicatrix. In a very few days after the closure of the abscess, the place began to feel indurated, and before the young man left town, a perfect and useful bone was reproduced, to the great surprise of several of my pupils, who had been in the habit of visiting him occasionally for the purpose of applying the moxas.

On examining into the circumstances which attended the above cases, it will readily occur to the reader that they differ essentially from the ordinary cases of necrosis in the bones of the extremities. No deposition of matter took place around the necrosed pieces so as to sequestrate them from the surrounding soft parts, before assistance could be rendered by a surgeon.* On the contrary, granulations sprouted up from the cavities previously exposed, by a removal of the bones; among the interstices of which a secretion of ossific particles afterwards took place, so as to reproduce the lost structure.

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* I would by no means have it supposed, however, that a necrosed portion of the lower jaw can never be presented in the form of a sequestrum. Two instances are related in Desault's "*Journal de Chirurgie,*" and, as these are the only cases which I recollect to have seen on record, I will briefly notice them. One is given in Vol. I. p. 107, by M. Boulet. The patient was a chasseur of the national guards, thirty-nine years old, whose third molar tooth on the right side had been affected with caries. On exposure through a cold damp night he contracted a cold in the diseased tooth which was attended with the formation of a large abscess in the cheek. Soon afterwards all the molar teeth of that side fell out spontaneously, and the jaw became enormously enlarged. Several fistulous orifices formed, through which the moveable sequestrum could be felt. Desault laid open the cheek and extracted the whole of the ramus of the bone in a necrosed state. "Le sequestre comprenait toute la branche de la machoire, excepté le condile et le sommet de l'apophise coronoide." The bony case which

Sometimes the granulations become converted into a dense ligamentous kind of substance like that which occurs so often between the fragments of a broken patella, or still more frequently around the extremities of a fracture within the cavity of the hip-joint. This is the same structure that was formed in place of the osteo-sarcomatous jaw which I amputated about two years ago; and it is generally found to intervene between the separated parts of a bone in the situation of a false joint. It sometimes becomes indurated so firmly as to answer the purposes of the bone in place of which it has been deposited; and not unfrequently it undergoes a process of real ossification. This conversion of granulations into ligamentous and bony matter, has been too little noticed by physiologists. Many physicians still appear to advocate the old hypothesis, by which ossification was supposed to proceed from successive depositions within the periosteum, in the same manner as the ligneous structure of trees is constituted from the interior lamina of their bark. To be consistent with such a doctrine they must, of course, suppose that no bone can be regenerated after it has once been removed *together with its periosteum* by any surgical operation. This is probably the reason why I was unsparingly, and, as the event has since proved, unreasonably censured by some

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had been formed around the necrosed part afterwards contracted and solidified, and the patient was restored to the perfect use of his jaws.

The other case is reported by M. Devers, p. 179, Vol. II. A little girl, ten years old, was attacked, during her convalescence from the confluent small-pox, with an inflammation of the left side of the face, which was followed by an abscess immediately over the ramus of the jaw. Three years afterwards, when she was unable to close the jaws on account of the tumefaction which surrounded a large sequestrum, Desault extracted the whole ramus, together with the condyle and coronoid process. The little girl recovered the perfect use of her jaw and her natural appearance.

of my brethren for amputating so much of the jaw in the case which was published in the first number of this journal.

In regard to the last of the interrogatories, in reply to which the present communication has been drawn up, it may be observed that any argument in order to prove satisfactory must be derived from experience. To tie up a carotid artery, however, before the successful performance of any operation, can only prove that the life of a patient is able to resist a double hazard, while his surgeon is gaining all the advantage that can be realized from such a precaution. Although many respectable surgeons have deemed it necessary to take this precaution before undertaking important operations about the throat and jaw, it does not appear that they have been able to establish their opinions. When we have ascertained that at least as many successful operations of the same kind have been performed without interfering with the main arteries, it can hardly be expected that we should agree to the necessity or even propriety of such a preliminary. A Shylock would, no doubt, be highly pleased with the suggestion of a plan which would enable him to slice out pounds of flesh and bone without the danger of shedding blood; but a surgeon has no reason to dread the effects of a trifling hemorrhage. A little manual dexterity will enable any one to secure the bleeding arteries as fast as they may be divided; and a skilful operator can generally avoid interfering with the larger class of blood-vessels. He who is not conscious of possessing these qualifications, should never undertake any important operation.—But I will not proceed further with this subject, lest I betray more warmth of feeling than would be either prudent or becoming. I will only state the result of my own experience, which has been altogether in favour of undertaking such operations about the throat and jaw as may ever be considered necessary, without resorting to the previous application of a ligature around the carotid.

I have extirpated almost all the glands about the throat in succession,*—the whole of the sub-maxillary and sublingal, the lower portion of the parotid and many of the neighbouring lymphatic glands; I have repeatedly had occasion to expose the carotid artery and jugular vein; and I have even dissected away tumours from the very coats of these vessels, without encountering either any immediate danger or subsequent inconvenience. As I have, with similar success, recently performed an operation which has been considered, both in this country and in Europe, to require a previous interference with the carotid artery, I will detail it at full length.

Mr. Joseph Brown came to this city in the month of July last, from Orange county, New York, with an enormous carcinomatous tumour which occupied the lower part of his right cheek and extended over a large portion of the throat, on the same side. It commenced on the inferior lip, in the early part of the year 1820, and gradually extended downwards and backwards over the base of the jaw. It was very distinctly circumscribed, and presented a firm cartilaginous kind of structure to the touch. Its margin occupied almost the whole substance of the lower lip, which was drawn very much towards the right by the growth of the tumour in that direction; it then passed downwards across the cheek, over the base of the jaw, just before its angle to the throat; finally, after extending forwards just below the jaw, it surmounted the right side of the chin, and terminated near the left commissure of the lips. The lower portion of the tumour which extended into the throat was less prominent than the part above; and on a careful examination I ascertained that it was distinctly separate from the original tumour on the face—being made up of secondarily enlarged lymphatic and conglomerate glands. The whole surface of the lip and upper portion of the tumour had been ulcerated for several months previously, from the surface of which a very offensive ichorous matter was constantly discharging. On introducing a probe through the centre of the ulceration, the subjacent bone was found to be carious, which indeed might have been suspected from the firm adhesion of the tumour to the side and base of the jaw. Severe lancinating pains had been experienced by the patient for a long period, and his appetite had become very much impaired in consequence of the intolerable fœtor of the discharge. His strength, however, and general health, were in other respects uncommonly good. There had been no hectic fever; nor had his countenance assumed that shrunken, cadaverous appearance which is so characteristic of a constitutional affection in such cases. The disease had made but very slow progress during the preceding few months; and the pains were by no means increasing in severity. He was only forty-two years old, and felt not a little anxious to protract his life for the benefit of a rising family.

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* In the case of a young butcher, J. Kunkle of Penn township, from whom I removed a frightful carcinomatous mass, extending from the lip very low down into the left side of the throat, I exposed the bifurcation of the carotid and secured, in succession, all the branches of the external trunk, with the exception of the occipital artery. In removing the sub-maxillary gland, I was necessarily obliged to secure the facial artery close to its origin,—in dissecting out an enlarged lymphatic gland, above and behind the former, I encountered the lingual artery;—and in raising up the lower portion of the parotid gland, which also was much enlarged and indurated, I had to secure the common trunk of the temporal and internal maxillary arteries. The stump of the external carotid was left at the bottom of the wound like the trunk of a tree divested of its branches. Beside all these vessels I encountered a large vein, the one which returns the blood from the sub-maxillary and neighbouring glands, and secured it just at its junction with the internal jugular. The patient recovered soon afterwards, with much less deformity than could have been anticipated by any one who had seen him before the operation.

I shall have occasion to detail several other operations which I have performed about the throat and neck, in a future communication for this journal.

On the 28th of July, I performed an operation for his relief, in the hall of the infirmary of Jefferson Medical College, in presence of the professors and pupils of that institution. An incision was commenced at the left commissure of the lips, and carried downwards, over the symphysis of the jaw and right side of the thyroid cartilage, to the anterior edge of the sterno-mastoid muscle. A second incision was next carried from a little above the right commissure of the lips, around the opposite margin of the tumour, and across the angle of the jaw, until it reached the termination of the former incision. The whole mass of the tumour was then dissected downwards from the surface of the jaw, and deeply from the throat beneath, until all the parts that were included between the two incisions had been removed. By this dissection several enlarged lymphatic glands were removed from the throat, together with the original tumour on the cheek.

After securing the facial and coronary arteries, I next proceeded to examine the condition of the jaw, which was deeply affected with caries. Having satisfied my assistants that it was absolutely necessary to remove it, I divided it by the metacarpal saw in two places,—1st, at the symphysis, between the two front incisors, and 2dly, a little before the angle—between the second and third molares. On dissecting out the intermediate piece of bone, the facial artery was again divided and secured; after which three more indurated, although not much enlarged, lymphatic glands were removed from the throat. As the surface of the sub-maxillary gland appeared to be discoloured and tumefied, all that portion of it which lay on the lower surface of the mylo-hyoideus muscle was removed;—the remainder, which accompanied the excretory duct above the same muscle, being evidently sound, was left undisturbed. Of course the facial artery was again laid open by this part of the dissection and secured, for the third time, much nearer its origin than before. Although the sublingual gland was so fully exposed that it protruded very much, it was not deemed necessary to excise it, on account of its healthy appearance.

The soft parts being now satisfactorily disposed of, I proceeded to examine the posterior extremity of the bone, the cancellated structure of which appeared somewhat discoloured, and bled profusely. As its condition was so suspicious, and as it moreover formed an inconvenient projection, which the integuments could not be made to cover, I applied the saw again, just at the angle, and removed about an inch more of the bone, together with the last molar tooth which was implanted in it. The integuments were then approximated, as much as possible, by three interrupted sutures, by means of which the cut extremities of bone were brought much nearer together than before, and the size of the wound, also, was greatly diminished. Some strips of adhesive plaster, and pledgits of patent lint, secured by a head bandage, completed the dressing, after which the patient was able to walk about with great ease.

In two days after the operation, as the sutures produced a painful degree of tension, and displaced the two portions of bone very much, I removed them, and trusted to the adhesive strips and bandages alone for drawing the opposite sides of the wound together. From that time he complained of no particular inconvenience, and continued to recover very rapidly. In less than ten days the cavity in the throat was entirely closed, and the wound in the face was greatly contracted in size. On the third week he was so nearly recovered from the effects of the operation that he insisted on returning to his family. The granulations which had sprouted up between the two extremities of bone, were then almost cicatrized over in continuity with the integuments, and the deformity was surprisingly diminished.

A letter, dated Orange county, Sept. 2d, has lately been received from Mr. Brown, which states that the wounded parts are now almost wholly restored and healed, and that he has the full power of mastication and articulation.

As it is by no means impossible that there may eventually be a return of the disease in this case, I do not presume to offer a complete history of it in the present communication. The final result will be stated in a paper which I shall hereafter publish on the probability of affording relief by operations for the removal of specific tumours.

In conclusion, I cannot avoid expressing some degree of surprise at the fact that intelligent surgeons could ever have anticipated the prevention of hemorrhage, in such operations as I have detailed, by previously securing either of the common carotids. The anastamoses between the branches of all the main arteries of the head are so large and frequent, that I question whether the division of any one of them would not be attended with a troublesome hemorrhage, even after the closure of both carotids. In every case in which the details have as yet been published, it appears that all the divided arterial twigs required the application of a ligature, whether the circulation of blood through their parent trunk had previously been intercepted or not.

Art. VIII.—*An account of the Pinta, or Blue-stain, a singular Cutaneous Disease prevailing in Mexico.* By Samuel M'Clellan, M. D. Communicated in a letter to one of the Editors.

Bristol, Pennsylvania, Sept. 6th, 1825.

Dear Sir,

In compliance with your request, I send you an account of a disease at present prevailing in a certain portion of the Mexican territory: but as I write from memory, without notes, and only from such information as could be obtained from a few short excursions made into that part of the country, with other objects in view than an investigation of the disease, I cannot expect to give a satisfactory account for our profession, but only such general observations as may excite the attention of others who may hereafter visit that country, to investigate the subject more fully.

From the information which I obtained from the most intelligent of the natives, I can only state that the disease, dedenominated by them the *Pinta,* or Blue-stain, made its appearance in the neighbourhood of the Volcano of Jorullo,* in the northern part of the province of Valladolid, shortly after its first eruption, and has gradually extended south, through the whole of the *Tierra Caliente,*† as far as the town of Mascala on the road from Mexico to Acapulco, and I believe still further south. It has generally prevailed among the lower class of people, who are of a dark colour; and is said to commence with slight rigors and nausea, followed by some degree of fever. These symptoms last only for a few days, when, on their subsiding, discoloured spots are discovered upon the face, breast, and limbs, of a lighter or yellowish appearance, which gradually change to a blue, and in advanced stages to a black—almost resembling the negro skin. In this stage the skin also has a rough and scaly appearance, and is somewhat inflamed, forming, when injured, either by accident or the stings of insects, deep and foul looking ulcers, with hardened and, in some cases that I saw, inverted edges, which the people themselves consider incurable. The perspiration of these persons is peculiarly offensive; but I believe their general health is not much affected, at least I did not understand that they suffered more from other complaints than those who were free from it. There is at present in the city of Mexico a regiment composed of persons affected with this disease, denominated the Pinta-Regiment, and officered by white men, who are appointed by government. A soldier's life, of course, subjects them to fatigue and privations, which, however, they appear to endure without more complaint or injury than others. They very generally, however, in common with all others who use the same diet,* are affected with dyspeptic complaints.

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* The Volcano of Jorullo, situated upon an estate of that name, broke out in the year 1775, from a level plain, and rose in one night to the height of between three and four thousand feet. Arrowsmith has given the name incorrectly in his map, by attempting to spell it in English as it is pronounced by the Mexicans.

† The Tierra Caliente, or hot country, is divided from the *coast,* (a narrow tract of land, so called by the natives, extending along the Pacific, from two to six leagues in width,) by the *Sierra Madre,* or Mother Mountains, a rough and broken chain, which running parallel to the coast, is from thirty to seventy leagues across. This country lies between the Mother Mountains and the foot of the Great Cordillera of Anahuac, and extends through the provinces of Valladolid and Mexico, into that of Puebla. It varies in width from thirty to sixty miles. The surface is broken by numerous ridges of high hills, with the vallies lying around their bases, and communicating with each other, well watered by numerous rivers. The soil is very fine, admitting the cultivation of all the products of a tropical climate.

The disease is said to be infectious, and facts seem to coroborate the account. I have seen persons who were born and bred up in the higher districts, where it is not known except by report, after having lived for a few years in the low country in habits of intimacy with the people, return with the disease. Nurses who are infected with it, and have been employed in the higher districts, have communicated it to children; but these, when treated in the first stage by light cathartics, and some of the active diaphoretic plants with which that country abounds, are said to have been cured.

There are many persons of the higher classes, however, who have resided nearly the whole of their lives among the pintoes, and have even employed them occasionally as servants in their houses, without contracting it;—but such have always enjoined the greatest cleanliness both upon themselves and servants, by repeated bathings, ablutions, &c. Others who have not observed these precautions have not been so fortunate; but among these I have not seen the disease so far advanced as among the lower classes. I do not recollect of having myself seen a single instance where the disease had been contracted out of the infected district, although these people are frequently met in almost all parts of the country west of the city of Mexico, passing and repassing with their produce, and other articles for sale: nor is the disease known otherwise than by name on the Pacific coast, or in other adjacent tracts of country which are separated from the *Tierra Caliente* only by intervening ridges of mountains.

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* The lower classes of people in Mexico live chiefly on corn-cakes and meat cooked with lard and red-pepper.

Whether this disease is ever communicated by propagation or not is very difficult to determine. In all the families in which I witnessed it, the children were infected; but whether it was inherited, or communicated to them by contact, is quite uncertain. I have seen it in infants at the breast. Others were said to have been free from it until a year or two of age. Such are always brought up, as they afterwards live, in extreme filth. It should be recollected also, that their diet is far from being delicious or wholesome.

It appears to me that this disease cannot with propriety be identified with leprosy. If it be, however, it must certainly be considered as a remarkable variety, and of an uncommonly mild form. I regarded it as merely a cutaneous disease, as I saw it affecting no other part of the body. The people believe it to be distinct from leprosy, which disease is not unknown among them, since I was called to see two reputed cases of it, at Rosario, near the district of the Pintoes. An elder brother of these two had been previously sent to the mountains by the alcaldes of the village, to prevent an extension of what they considered to be the genuine leprosy.

The physicians of the country, in whom however but little confidence is to be placed, regard the pinta as a specific disease, and as generally incurable. I never heard of even an attempt to cure it in the low country. It was at Temascaltepec, five or six thousand feet above the level of the ocean, that it was said to have been cured in the cases of infants when taken from their nurses.

I regret that my memory is so little able to furnish you with a history of such particulars as would assist you in forming a more accurate opinion of the nature of this singular disease. If some notes of the daily observations which I made in repeated tours through the hot country, and which I accidentally left behind me on leaving the city of Mexico, should ever arrive, I will take pleasure in forwarding them for your inspection. In the mean time, I remain,

Yours, very respectfully,
S. M'Clellan.

Art. IX.—*An account of a New Instrument for the extraction of coins and other foreign substances from the œsophagus.* By Nathan Smith, M. D. Professor of Surgery, &c. Yale College.

I have twice been called upon to remove coins from the throats of children. In both instances, they had descended to near the inferior extremity of the œsophagus, where the passage is a little narrowed, just before entering the stomach. Of course, they were entirely beyond the reach of forceps, or any instrument which might be employed to grasp and thus withdraw them.

The instrument which the exigencies of the case suggested, and with which I succeeded, was unlike any thing which I have known to be employed for a similar purpose. A very few words, with the accompanying plate, will be sufficient to give an idea of it.

The shaft of the instrument is a rod of whalebone, twenty inches in length, and of the size of a small quill. Half an inch from one extremity there are attached, at acute angles, like the barbs of an arrow, two wings of silver, an inch and a quarter in length, a quarter of an inch wide, and so thin as to be very elastic and flexible. The extremity, which stands off from the instrument, is convoluted so as to render it blunt, and is a little curved inward toward the shaft of the instrument. The two wings are pinned to the shaft of the instrument, and may be continued over its extremity, which should terminate with a bead or obtuse point.

From the position of the œsophagus between the trachea and spine, the faces of the coin present forward and back. When the instrument is thrust down the œsophagus, avoiding the glottis, as may be done without difficulty, and presenting the barbs one forward and the other back, it will pass either behind or before the coin, and the barb will spring beyond it, and catch it between itself and the shaft, when it may be very easily withdrawn. The manner in which the shaft is embraced by the œsophagus above, prevents its slipping off laterally. In both the cases alluded to, I accomplished the extraction of the coin without any difficulty, and at the first trial. In the second case, after I had once raised the coin into the mouth, the child instantly swallowed it again, though I had almost seized it with my fingers. It returned to the same place, and I again withdrew it at the first trial.

The barbs are made so thin that should they catch in any of the follicles of the œsophagus, they would be everted sooner than rupture the membrane.

A reference to the accompanying plate will enable the reader to form an idea of the instrument.

ANALECTA.

1. *Dr. Gometz on the Tænifuge properties of the Pomegranate root.*—Among the East Indians, the bark of the pomegranate *(punica granatorum,)* is said to have been employed from time immemorial in cases of tænia; and the late accounts we have of its efficacy by European writers, would seem to establish its character, as incomparably the most important tænifuge we possess. Dr. Buchanan,* who practised for many years at Bengal, was the first who made this article known in Europe as a remedy in tape worm. Some time after Dr. B's. communication, further information was given to the public on this subject, by Mr. Breton, surgeon to the Ramgur battalion in the East Indies.† Mr. Breton gives an account of eight cases of tænia successfully treated by the pomegranate bark. He employed it in the form of decoction, made by boiling two ounces of the fresh bark of the root, in a pint and a-half to three-fourths of a pint. Of this a glassful was administered every half hour, till four or five doses were taken. He also gave it in the form of powder in doses of twenty-five grains, repeated every hour. Dr. Gometz has detailed fourteen cases which were promptly and completely relieved by this medicine. Dr. G. thinks that the best time for administering this vermifuge is when joints of the tænia are observed to pass off with the stools. According to his experience, it is dangerous to employ the bark in larger portions than three ounces to the quantity of water mentioned above. When given too largely it produces nausea, vomiting, diarrhœa, vertigo and faintness. If these symptoms appear, the medicine must be omitted for four or five hours, when it may be resumed in proper doses. If one pint of the decoction fails to expel the worm during the first day, the same quantity should be administered on the succeeding day. The worm very seldom resists the operation of the remedy longer than two days. The dry bark is much stronger than the fresh,—one ounce of the dry bark may be considered equivalent to one ounce and a-half of the fresh.

This medicine was employed successfully in a case of tænia in this city by Dr. Mease.

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2. *Desperetz on Animal Heat.*—The Academy of Sciences of Paris have awarded the prize of three thousand francs to M. Desperetz for his dissertation on Animal Heat. The general result of his inquiry is: that in herbiverous animals 0,82 parts

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* Edinburgh Medical and Surg. Journal, V. III. p. 301.

† Medico-Chirurgical Transactions, V. XI.

of the animal heat is evolved by respiration, in carniverous animals only 0,78 parts are evolved by this process.

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3. *Menstruation through the nipples of the mammæ.*—Dr. Rudolph of Cottbus, has noticed a remarkable instance of vicarious menstruation from the breasts.

A young woman aged fifteen years, of a delicate habit of body and of rapid growth, in whom menstruation had not yet commenced, experienced considerable pain and swelling of the nipples, which was succeeded by an oozing of blood from these parts of about twenty-four hours continuance. The pain, swelling, and oppressed breathing, now subsided. In four weeks after this occurrence, the same train of phenomena recurred; and subsequently returned several times in the same manner, at intervals of four weeks. By the employment of warm bathing, and other means calculated to direct the menstrual effort upon the uterine system, the menses were brought on in their regular form, and the former affection of the breasts did not return.—*Hufeland's Journal for Nov.* 1824.

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4. *On the presence of water in the lungs of drowned persons.*—If there had not been something defective in the mode of examination of bodies found drowned, the presence or absence of water in the lungs after such an accident would not have remained to this day nearly as unsettled a point as it was more than a century ago. The trial of Spencer Cowper, for the murder of Sarah Stout, which took place at Hertford in 1699, affords a curious specimen of contradictory evidence on this subject: the witnesses were, for the most part, unprovided with any positive evidence drawn from the inspection of the lungs of the human subject after drowning; and we think we could point out more than one county in England in which the verdict of "Found drowned" is so often given without the body being opened, as to cause the experience of medical witnesses to be quite as limited in the year 1825. In Professor Mayer's paper we have a long list of authorities both affirmative and negative; and the question is of so much interest in a medico-legal point of view, that every attempt to make it the subject of research in the human subject, if not of experiment upon the lower animals, deserves attention and encouragement. Professor Mayer, having made many experiments on animals, and invariably finding a small quantity of water or bloody serum in the lungs, repeated them, with the sole difference of drowning the animals in water containing colouring matter. He asserts that the results were still the same, that he found a fluid in the air-passages, having the colour of the fluid in which the animal was drowned: in one experiment a cat was immersed in water to which hydrocyanate of potash had been added, and kept in five minutes, being taken

out before it was dead, to prove that the fluid actually entered the trachea during life: a portion of the trachea was cut out, a glass tube, previously dipped in a solution of hydrochlorate of iron, was passed into it by the opening, and a deep blue precipitate was immediately formed. The lungs were full of froth, which afforded a similar test. The experiment was repeated on another cat, with precisely the same results.

From fifteen experiments, which are detailed, Professor M. deduces the conclusion that water does penetrate into the lungs of drowned persons during drowning. He refers to the experiments to prove that this takes place whether the animal remains a long or a short time in the water; whether it is taken out living or dead, or several hours after death; whether the animal is drowned in hot or cold water; whether it is kept wholly under water or allowed to come occasionally to the surface; whether pure water or coloured fluid, or some chemical re-agent, is employed; and equally in different kinds of animals. Lastly, he adds, that he has examined several bodies of drowned people, and has always found a more or less aqueous froth or an actual liquid.

The importance of this question does not entirely rest on its interest with a view to medico-legal investigations: it has some reference to our attempts to resuscitate drowned persons. For if more or less water always penetrates into the trachea and its ramifications, or even if this happens occasionally, even when the body has not been long in the water, it may be necessary to disembarass the air tubes of such an obstacle to their due inflation. In an example recently witnessed by the writer of this notice, it was the belief of all the professional assistants, that their attempts to restore respiration were materially impeded by this circumstance, although permission could not be obtained to verify the fact by an examination. Professor Mayer has found, by several experiments, that, by using an elastic tube and syringe, he could draw out any fluid from the trachea as far as its division, but could not command what was situated lower. This, however, will generally be sufficient, as all the fluid in the bronchiæ will be rapidly absorbed. According to some experiments formerly published by him in the *Journal Complementaire*, fluids poured into the lungs were found two minutes afterwards mixed with the blood of the left ventricle; in four or six minutes mixed with the serum of the pleura and pericardium; and at the end of five or eight minutes in the urine.—*Lond. Med. Repos.*

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5. *Diagnosis between Irritation and Inflammation of the Mucous Membranes of the Bronchiæ.*—M. Nauche thinks he has discovered a chemical test of bronchial inflammation in the secretion from the mucous surfaces. In the natural state, or where

there is merely *irritation*, the mucous secretion he has found to be acid, while, on the other hand, when actual inflammation obtains, the nature of the secretion is changed, and it becomes alkaline. The two states are readily recognised by turnsol paper, which turns red with the one and blue with the other.

M. Nauche has examined the expectoration, with respect to its acid and alkaline character, in the diseases of the respiratory organs. He believes, from this inquiry, that they may be divided into matter produced by irritation—an increased secretion of the mucous follicles, which line the membrane of the air-passages, and into matter, or expectoration, which results from their inflammation. He has observed that the white, mucous, frothy expectoration, which is frequently brought up in large quantities by persons in a state of agony, has always an acid character, when the air-passages have not been the seat of previous disease. This character is likewise found in the white, frothy expectoration which occurs during the whole continuance of pleurisy, whether acute or chronic; and at the commencement of pneumonia, when the matter expectorated is white, or even yellow. It is often lost in the course of this disease, and reappears towards its decline. The acid expectoration is likewise found in emphysema of the lungs and scrofulous phthisis, when the tubercles are but little developed, in the state called crude. It is evident, in all these cases, that the mucous membranes which furnish the expectoration are only in a state of increased excitement, and that they are in no degree inflamed. M. Nauche has likewise found acid expectoration in certain advanced cases of phthisis. He believes that this depended upon these matters being the product of an increased secretion of the mucous membrane lining the excavations formed by the tubercles.

The expectorated matters, on the contrary, are always alkaline in inflammation of the mucous membrane of the bronchiæ, and in all the cases designated by the names of acute and chronic colds, or mucous phthisis *(phthises muqueuses.)* Although this expectoration is not regarded as purulent, it is nevertheless a kind of pus peculiar to inflammation of these membranes, and analogous to the purulent serosity which is furnished by serous membranes when in a state of inflammation.

The expectoration likewise becomes alkaline in peripneumony, when the inflammation of the pulmonary tissue communicates itself to that of the mucous membrane of the bronchiæ; and this secretion is the product of the inflammation of these two tissues.

The expectoration is likewise alkaline in phthisis pulmonalis, in the second or third stage, when the tubercles become broken down. It is usual, in such cases, to find the internal membrane of the lungs deeply altered.

It frequently happens, particularly among phthisical patients, that both these kinds of expectoration are to be found in the same vessel. That which results from an augmented excitement comes up most easily, is white, frothy, and acid; the other is brought up with difficulty, is yellow, thick, and alkaline. In this disease, when the patient has only the former kind of expectoration, his life is often in the greatest danger.—*Medico-Chirurgical Review.*

6. *Fatal Asthma from Affection of the Glottis.*—The researches of Magendie and others, teach us that, 1st, the constrictor muscles of the glottis are supplied by filaments from the superior laryngeal nerve, whilst the dilator muscles are supplied by branches from the inferior laryngeal or *recurrent* nerve; 2d, that the glottis dilates during inspiration, and is closed, almost hermetically, when we make any considerable muscular exertion, as in lifting a weight, for example. Every one must have observed that the breath is firmly retained when we make any great straining exertion with the muscles, especially of the upper extremities. These physiological points are requested by our author to be borne in mind, as they will come in to an explanation of the following case:

Case.—Michel, twenty-two years of age, a servant, was received into the hospital Cochin, the 26th of June, 1822, having been discharged only eight days previously from a Maison de Sante, where he had been under treatment for two months, for what was called a putrid fever. The following symptoms were now observable, viz. considerable hoarseness—violent pain in the throat—great sense of suffocation on the least muscular exertion—tongue white—appetite good—pulse frequent and small—face pale and emaciated—chest sonorous, except at the inferior part of the right side—respiration audible in all parts of the thorax—nothing remarkable in the action of the heart. The same symptoms were observable the following day. He expectorated abundantly. At ten o'clock in the evening he was obliged to start from his bed—his inspirations being profound and frequent, accompanied by a peculiar hissing noise. The patient appeared terrified, his eyes starting, and dreading instant suffocation, which indeed appeared inevitable. His pulse was scarce perceptible. These alarming symptoms abated a little in the night. *June* 28. Still great anxiety. Blister to the region of the larynx. In the course of the day, a return of the sense of suffocation, with a horrible state of anguish, during which the patient tore the blister off his throat, and appeared strangling—his head erect, and his neck stretched as much as possible. 29th. Sense of strangulation still more distressing than ever—he was constantly putting his hand to his throat, as if to remove something that was strangling him. He cried for prompt relief from his dreadful anguish, his eyes starting from their sockets, and his countenance an image of despair—the whole of the respiratory muscles in a state of convulsive orgasm. These horrible symptoms continued till four o'clock in the morning of the 30th, when death put an end to his sufferings.

Dissection.—An abscess was found situated at the posterior part of the larynx, and also on the sides, the cavity of which was capable of containing a filbert, and its internal surface smooth. The cricoid cartilage was denuded. On closer examination, it was found that the abscess extended round the cricoid cartilage. The crico-arytenoid muscles were of a greenish colour. The arytenoid cartilages were confounded with the muscles abovementioned, which were in a state of disorganization. No nerves could be traced in them. The arytenoid muscle, however, and its nerves, were well preserved. The glottis was not above three or four lines in length (its rima.) The articulations of the arytenoid cartilages with the cricoid were destroyed. The mucous membrane of the larynx was pale, and the cavity itself filled with reddish and frothy mucus, which was also found in the trachea and bronchia. The mucous membrane of the lungs was, generally speaking, of a deep red colour. The inferior and posterior portion of the right lung was hepatized, but all the rest of the lungs sound. There was no disease in any other part of the thorax. *In the small intestines were found numerous ulcers perfectly cicatrized.—Ibid.*

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7. *Practical Observations on Mercurial Fumigation.* By A. Gibson, M. D. Staff Surgeon.

> "Femur tumentibus
> Exile suris additum."

Of all the duties of the military surgeon, the most constant and unsatisfactory is that which calls upon him to administer to the chronic forms of disease, usually classed in our medical returns under the specious term "Anomalous." It is the obstinacy of these, and their perplexing variety, which, no doubt, so long ago conferred the epithet opprobrium on many of them; for, after having withstood the most accepted judicious medical treatment, and been unprofitably subjected to the not-minor benefits, in many instances, of long ease and nursing, they have usually at last been abandoned, to be ranked among the incurables, and their victims exiled beyond the pale of science.

But it has, doubtless, been observed, by every medical officer of a certain military experience in India, how frequently those men again offer themselves to the public service, full of energy and activity, and free from every physical disqualification, amply competent (as they afterwards prove) to its most arduous duties. This observation was rendered particularly remarkable last year, whilst in Rhandiesh, by the return of a Sepoy, after a short leave of absence, supple and active, although emaciated, who had left the hospital crippled and nearly helpless. The fact was too striking not to make an impression, and academic honours blushed for a moment to be outdone by some illiterate Paracelsus of a Mahratta hamlet. It was very evident, from the state of the gums and mouth in this case, that mercury had been used in some form, which had acted upon them with more severity than, in similar cases, is thought by British practitioners to be required, and that the debility at the same time was by no means such as would have followed any course of mercury prescribed *secundum artem*, to produce equal effects. But the Sepoy was too ignorant, or his *hukkheem* too cunning; for I could not ascertain that mercury had actually been given, but only that he had been exposed to fire and smoke; and drank some medicated decoction, during which his mouth had become very sore, and he himself rapidly convalescent.

It was on being foiled in the treatment of some of the following cases, that I was led to consult the judgment of Dr. Milne, the superintending surgeon of the division, on the probable good effects to be derived from mercurial fumigation, who, ever unwearied in his zeal for the promotion of medical improvement, procured for me a skilled native, to whose method alone I entrusted my earlier cases; which, with others, equally fortunate, in my own immediate charge, form the subject of this communication.

Cases successfully treated by Mercurial Fumigation.—Koondallee Sackpal, Sepoy, admitted into hospital, with rheumatism, on the 24th of June. Pain greatest in the right elbow-joint, which was considerably swollen and stiff. All the usual means recommended in such instances failing, mercurial fumigations were tried the beginning of August, which being administered fourteen times, or morning and evening for seven days, he was returned for duty on the 15th of that month: being detained in hospital the last few days, till salivation ceased, and the mouth became well.

Balnac Darnac, admitted on the 28th of June, with rheumatism. Pains general, but greatest in the ankle-joints, which were swollen and rigid; the swelling and stiffness extending over the foot to the toe. The usual remedies failing, fumigations were begun the beginning of July, applied fourteen times; and on the 11th of August he was dismissed.

Doon Sing, Sepoy, admitted into hospital, with syphilis, on the 17th of February. A phagedenic chancre, of a most obstinate and threatening nature, was the most difficult primary symptom to treat. The usual mercurial course was followed by general pains, and all the untoward symptoms denominated "anomalous." Unsuccessful trials were made of the alteratives considered the most active,—such as oxy. mur. hydr., pil. hydr., sarsaparilla, ipecacuanha, alone and in many varied combinations, with opium; blisters, liniments, cupping, frictions, and bandaging, were long and ineffectually used. He was bedrid, and his general health greatly impaired, from suffering and want of rest, when mercurial fumigations were resorted to. He is, (August 21st,) after fourteen applications, walking actively about the hospital, complaining only of a sore mouth, and very slight stiffness of the ankle-joints; which, considering the dampness of the season, is not to be wondered at.

October 27th.—Perfectly well.

Goordat Sing, Sepoy, admitted with venereal, on the 28th of February. The early history of this patient is very similar to that of Doon Sing. The secondary character which his disease assumed was so much the more formidable, however, from swellings that from time to time appeared on different parts of his body. The principles of the treatment were the same. The following were the prominent symptoms and appearances in the beginning of August, when mercurial fumigations were used:—General health greatly impaired; bowels irregular; appetite bad; habit emaciated; occasional nocturnal attacks of fever, with intense thirst; constant lassitude and listlessness; considerable enlargement of the os calcis; swelling of the digital extremity of the middle metacarpal bone, and a bump on the spine of the scapula: these enlargements acutely sensible to the touch. As the system became affected, after a few fumigations, all external marks of disease began to vanish; the pains, from the first, became blunted; and, after seven days use of the remedy, he had no complaints. At present (August 21st,) he is active and supple, and, but for the inclemency of the season, would be on the convalescent list.

October 27th.—Stout and well.

Shaik Moiddeen, Sepoy, admitted, with rheumatism, on the 9th of May. Painful swelling and stiffness of the joints of the lower extremities; for which the usual active and palliative means were vainly used. Commenced fumigations the beginning of August, which were employed, as in the other cases, fourteen times. Was severely salivated. Dismissed cured.

Rodrigues — was admitted on the 1st of August, with nocturnal pains, and a scabby eruption of the legs and arms. Was lately under mercury for a virulent chancre, for the usual time. After seven days' fumigation, the pains subsided, the eruption disappeared, and he was dismissed.

N.B.—September 30th. This patient, a poor man, left the hospital in damp, rainy weather, whilst under mercury; and has since sought relief for pains, most probably to be thus accounted for; and, having been again successfully fumigated, is now free from complaint.

The following cases formed the subject of a second communication to the superintending surgeon.

August.—A female, æt. seventeen. Pains and swelling of the lower extremities, (the former, worst during the night:) general pains and stiffness of the joints; great difficulty in rising, when once seated; emaciated; colour sickly; appetite bad. Has been ailing above a year. Was fumigated fourteen times; mouth became only tender; salivation very trifling. Cured.

Remarks.—Although the history of this female was imperfect, the symptoms afford grounds for suspecting a venereal taint, but she persists in never (to her knowledge) having been diseased. But, venereal or rheumatic, the case is valuable, the cure being complete.

A commissariat servant, was supposed to be cured of chancres about two months ago, after the usual course of mercury, in the form of pill and friction. For a week past, has been troubled with a thickening and dryness of the cuticle, on the points and under the nails of his fingers, which peels off without discharge. A dry eruption, also, between the fingers and toes, and on the palms and soles, which detaches itself, in like manner, in the form of thickened cuticle; in some spots on the latter leaving a little rawness; a suspicious excoriation on the inside of the prepuce; appearance unhealthy. Used fumigation fourteen times. Mouth made very sore, and considerable salivation. Cured.

Remarks.—This Portuguese being of irregular habits, it is probable that the appearances described were the sequelæ of a prior and more confirmed pox than the primary symptoms alluded to; of which he was, in all probability, as perfectly cured as he could be, in a diseased habit. The mouth became so sore, that the head was latterly excluded during the progress of fumigation.

August.—A European. A general, vesicular, watery eruption over the body, itchy, and disturbing rest: a swelling in the groin, of long standing, and glandular swelling on the right side of the neck; phymosis, and discharge; general health considerably affected; appetite bad; sleepless; spirits greatly depressed. Has used mercury at various times, for suspected venereal, in the course of the last two years. The eruption first appeared between two and three months ago, for which ointment and washes of various kinds were applied. Latterly has been taking corrosive sublimate, and using mercurial frictions, with partial good effect on the eruption, but evidently with injury to the constitution. Fumigated fourteen times. Mouth sore and salivated. Cured.

Remarks.—I fancy so obstinate a complication of symptoms cannot be assigned to any other cause than a latent venereal taint. A proof, perhaps, of the system, as well as the mouth, being early affected, or at least favourably influenced by the mercury, was the healthy sleep which followed four fumigations. This amendment, however, was disturbed by a little gastric derangement, which an aperient immediately rectified. The profuse sweating, which in every instance has attended the process for a shorter or longer period, in this case soon abated; and a slight irritation of the eyes, from the vapour, was the only inconvenience afterwards. The little phymosis remaining seems to be natural. The sore mouth occasioned some suffering; but the feelings of rude health and good spirits now enjoyed, are gratefully valued by this patient.

August.—A poor patient. Considerable inflammation, with swelling and slight suppuration, above the ossa nasi; two small ulcerated openings between the cheek and right ala, discharging matter and maggots; a purulent discharge from the nostrils; œdema of the lower eyelids, closing both eyes; shooting pains of the cranium. Was fumigated fourteen times. Mouth very sore, and severely salivated.

Dismissed, cured, 1st October.

Remarks.—It is not easy to imagine a more loathsome object than this poor old man presented, and, although no distinct history could be obtained, it may be denominated (I presume) a form of secondary syphilis. In so virulent a degree of inflammation, threatening such destruction, but little can be conceded to fomentations, which were conjoined in the treatment, or the few grains of camphor introduced into the ulcerated openings. The symptoms began to subside speedily, as the system very early became affected,—judging from the mouth, as well as the amendment. The mouth I thought it prudent, for the sake of the neighbouring parts, to expose to the vapour throughout the whole period of the fumigation, thereby inducing a more than usually profuse salivation, and rather severe ulceration of the mouth. The only other inconvenience experienced was a little gastric derangement, which an emetic and gentle aperient removed. A small cicatrix is the only exterior vestige of disease now remaining. The features are again natural; and a slight purulent discharge from the nostrils, which remained for some time, was cured by a gently astringent injection.

September.—Blucgwatta, shop cooly. For the last ten months or so has been in delicate health, and suffering from general pains. Complaints originated in jaundice, for which he took mercury. Is at present thin and emaciated, and general health is greatly impaired. Has used medicines of various kinds at different times. Fumigated, three times daily, with the simple oxyde of mercury, for fourteen times. Mouth tender on the second day, when the pains began to give way. Cured.

Remarks.—This case of chronic rheumatism, besides the speedy relief procured, is only remarkable for the fumigatory employed,—the common blue-pill mass of our pharmacopœia.

Dhondoo Parab, Sepoy, admitted on the 3d instant. Has concealed a venereal infection for fifteen days. Penis greatly swollen, tense and very painful, with gangrenous inflammation of the prepuce, which at one place is ulcerated through, and discharging a foul, bloody pus. A poultice was applied for two days; but the progress of disease became so threatening to the penis, that fumigation was resorted to on the 5th. On the 6th, the mouth was tender, and the line of separation between the diseased and sound parts of the prepuce forming; and, on the 7th, the prepuce dropped off, leaving a clean sore, as if circumcised, and exposing a deep foul ulceration in the body of the glans. Mouth very sore, and salivation profuse, partly from the native composition, and partly from the oxyde of mercury. Sore healed under simple dressing, and blue-stone occasionally.

Remarks.—This case affords an instructive lesson of the good effects of speedily impregnating the system, in cases of virulent primary venereal sore; and the simplicity of the process by which this can be accomplished, and disease arrested. Fumigation may here be said to combine all the advantages derived from the general and topical application of mercury. This patient was returned to his duty early in October, with no more mutilation than circumcision causes, although, on entering the hospital, the prognosis was so unfavourable. I have never seen circumcision by the knife heal more speedily; a fair test, it may be allowed, of all morbid taint in the system being destroyed.

Observations.—Having professed obligations to the native practice of mercurial fumigation, and adduced examples in support of its sanative efficacy, I shall now mention the composition which is in use in this corner of India, either for adoption in all its crudeness, or to benefit by the improvement of the more cultivated judgment and systematic experience of others.

Quicksilver ʒiij. = 1 iola.
Litharge (*moordarsing*,) ʒj. ℈ij. = ½ iola,
Red lead (*sendoor*;) ʒiij.
Sulphate of copper ʒss.

The whole is well triturated together, for about two hours, with a quantity of the leaves of a jungle plant (*shetur*), till formed into a mass, which is divided into fourteen portions, each the size of a small nutmeg, for use. One of these being laid on a small bit of tile, this is placed on live cow-dung, in an earthen dish, on the ground, between the patient's legs, who, in a sitting posture, is enveloped in a blanket. In about half an hour, the operation is over, the mercury being volatilised; and it is usual to employ this morning and evening.

The merits of such a compound must, I presume, be allowed to rest on its remedial virtues, and the nicety of analytical research forborne, in tenderness to its curative effects. But, although refinement may smile at its rudeness, and chemistry might detect much that is unscientific in a combination which such ingredients form, and perhaps caution, *a priori*, might shrink from its employment, it may be that the most fastidious will discover more that is extraneous than noxious in it. The following sentiments of Dr. Paris, in his "Pharmacologia," will be received as respectable support, at least of the latter part of this opinion. "Certain bodies," says Paris, "appear likewise to be incompatible with the compounds of lead, not from the chemical changes they induce, but from the contrary effects they produce upon the body: thus, mercury appears to invalidate their powers, and to counteract their effects, as we may have observed in treating saturnine cholic."

But, far from advocating a remedy on any ground which sound principle and experiment do not support, and (in common, probably, with most medical men,) rather inclined to be sceptical and wary in any deviation from established truths, than become the partisan of equivocal hypothesis, it will be observed, in my latter cases, that a simple oxyde of mercury was employed. It was partly the dread of the saturnine portion of the composition which made me resort to this change; but whether, in cases of phagedena, or virulent venereal ulceration, requiring speedy arresting means, lead may not be a very essential fumigating principle, must be left to experiment to decide. As the simplest form, and one always to be procured, I employed the common blue-pill mass, in the quantity of half a drachm each time, which probably, both in quality and quantity, is not far removed from the native preparation of mercury.

It is not my intention, in this communication, to enter on the merits or demerits of a plan of using mercury, which (not more favoured than others) has at various times had its abettors and detractors: neither shall I further enlarge on its modified combination. The opportunity has been afforded me of proving it favourably, and the results of my success I have confidence in giving publicity to. I have also had occasion to know that, in respectable hands elsewhere, since my first cases were promulgated, it has generally fulfilled expectations; and, from this union of success, it has been favoured with the recommendation, to the gentlemen in his division, of one of our most experienced medical officers, who superintended my hospital. In venereal affections of every stage, it is in universal use among the native population, who (so far as I have observed, and can learn,) exhibit no deforming traces, either of its baneful consequences or inertness.

Therefore, from a certain satisfactory experience, and an anticipation of the valuable purposes, in morbid conditions of the system, to which so active an agent as mercurial fumigation, may be safely applied, I hope that this little practical sketch may be acceptable.—*From the London Medical and Physical Journal for July*, 1825.

8. *Connexion between the anterior Lobes of the Brain and the Motions of the Tongue.*—M. Bouillaud, in a Memoir on the Influence of the Brain on Muscular Motions, and especially on those of the organs of Speech, concludes, from the result of his own observations, as well as from a great number of cases related by different authors, that the anterior cerebral lobes are particularly concerned in the motions of the tongue. Whenever palsy of that organ has been observed, a greater or less degree of alteration in this portion of the brain has been remarked.—*Revue Med.* Avril.

9. *Sense of Smell independent of the Olfactory Nerves.*—M. Magendie has communicated a case to the Royal Institute of France, communicating his views relative to the olfactory nerve, which he considers as having nothing to do with the sense of smell. It is the case of a man, in whom the inferior portion of the brain and the olfactory nerves were impaired (*alteres*) or destroyed, although he still retained the sense of smell.—*Ibid.*

10. *Reproduction of the Crystalline Lens.*—M. Coqueteau has made a series of experiments, with a view of ascertaining to what extent this lens is capable of reproduction. From these experiments it would appear, that, when the crystalline lens is removed without destroying the capsule, the lens is regenerated. M. Demours has made numerous experiments relative to the same investigation; the results of which have led him to conclude, that no reproduction takes place unless some fragment of the lens has been left behind. M. Roux operated, five years ago, on an individual affected with double cataract. The crystalline was extracted; since which time he has seen perfectly well, and the myspia, which existed for some time after the operation, has completely disappeared. It continues to diminish every day; so that he has rather become presbyotic, with reference to his former condition.—*Revue Med.* Mars.

11. *Unnatural Growth of the Bones of the Cranium.*—M. Devergie, sen. records the case of a veteran, who lately died at the Val de Grace, in consequence of an aneurism of the aorta. On opening the body, all the suborbital portion of the base of the cranium, and of the frontal bone, was found considerably thickened, and presenting on the right side an enormous schirrous tumour, which had caused the obliteration of the greater part of the olfactory foramina. The growth of bone had also contributed to narrow the diameter of the optic foramina, by

which those nerves were evidently compressed. Nevertheless, there was not any symptom present, during life, to induce the suspicion of so extensive a disease, and no imperfection was observable either in the sight or smell.—*Revue Med.* Avril.

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12. *Bloody Tumor in the Abdomen.*—A young man, a patient in the Hôtel Dieu, had experienced for some time a pain in the umbilical region, when, through the abdominal parietes, a tumor of some volume was felt. After remaining some time in the hospital, he expired in a fainting fit. On opening the body, a tumour, of the weight of two pounds, formed by blood extravasated between the layers of the mesentery, was discovered. The coagulum was very friable, and divided, almost *ad infinitum*, by cellular tissue, in which the extravasation had taken place; but the source of the hemorrhage could not be discovered.—*Ibid.*

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13. *Death from Acupuncturation.*—Among the clinical cases recorded in the practice of M. Recamier at the Hotel Dieu, we find that of a man afflicted with the colica pictonum. Having been under treatment for several days, without deriving any benefit, on the 7th of February three acupuncture needles were placed in the abdominal parietes,—one at the epigastrium, and two others, one on each side of the navel: the needles were five inches long, penetrated into the abdomen two and a-half inches, and as much remained externally. The man, instead of remaining quiet as directed, went in this condition to stool; and the two needles placed at the side of the navel, having no heads, escaped into the abdomen; that situated at the epigastrium was taken out, a little rusted. The man did not seem to feel any ill consequence at the time; but in the night he was seized with delirium, and the next day, though he was able to reply to any questions put to him, he relapsed immediately into the same state. The abdomen appeared free from pain, and there was no other particular symptom. He died in the evening; and we are told that no traces of inflammation were found in the abdomen, or any where else. One of the needles was found in the mesocolon, the other fixed in the peritoneum, in the side opposite to that at which it had entered.—*Revue Med.* Avril.

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14. *On the Sensibility of the Nerves of the Senses.*—M. Magendie, at a recent meeting of the Institute, communicated verbally some observations on this subject. He is of opinion that the sensibility of the nerves of the senses is entirely relative to the kind of impression which they are destined to communicate; that the retina, for example, is only sensible to light, and that it may be pressed, pricked, or torn, in animals, without exciting

pain. A short time ago, in operating for cataract on a woman, M. Magendie accidentally touched the retina, without his patient manifesting any sensation. Having afterwards touched the retina of both eyes, he ascertained, in the most satisfactory manner, that this part is as insensible in man as in other animals. The woman did well.—*Bulletin des Sciences Medicales*, Mars.

15. *On the Galvanic Phenomena which accompany the Acupuncturation.*—M. Pelletan has ascertained, by means of the galvanométre of M. Bicquerel, that perceptible quantities of this fluid are always disengaged by a needle plunged into a part of the human body affected with pain. The quantity is extremely small; perhaps, says M. Pelletan, not equalling the hundredth part of what is obtained from a single plate of a common voltaic pile. Nevertheless its effects may be rendered sensible; for which purpose, it is sufficient to make the needle inserted into the affected part communicate with the mouth, by means of a metallic wire. M. Pelletan thinks these galvanic phenomena unconnected with the curative effects of the operation; which opinion is founded upon the circumstance of the relief obtained by the patient being in no case in proportion to the quantity of the fluid disengaged; and that very marked effects result from the acupuncturation, even with a needle terminated by a non-conductor. No perceptible difference presents itself with regard to the degree of relief between the use of needles ending in non-conductors, and those so arranged as to allow the electricity to pass off. It is asserted by M. Pouillet, that no galvanic phenomena present themselves when needles made of platinum or gold are employed; for which he infers that, in the cases alluded to, the effects were the result of the oxidation of the metal. M. Pelletan has seen incontestible success follow the use of the acupuncturation, particularly in rheumatic affections.—*Ibid*, February.

16. *Rupture of the Spinal Marrow.*—M. Andral has related, on the authority of M. Velpeau, a case of disorganization of the spinal marrow, which gave rise to no symptoms by which the existence of so severe an affection could have been suspected. The singularity of this fact, and the deductions drawn from it by the author, gave rise to a discussion at the Royal Academy of Medicine, in the course of which various members related instances of the complete destruction of organs important to life, in which no suspicion was entertained of the nature of the disease, until it was ascertained by examination after death. Among others, the case was related of an individual long affected with hemiplegia, in whom the most minute dissection discovered no vestige of morbid alteration: the brain and spinal

marrow, the circulating system and lungs, the digestive organs and the kidneys, were successively and ineffectually examined. —*Revue Medicale*, Mars.

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17. *Unusual Appearance of the Blood.*—M. Velpeau relates the case of a man, robust and of good constitution, who had never experienced any severe illness during his life: he had been much given to venereal indulgencies, but had not suffered from syphilis. At fifty-seven years of age he fell upon his right side, and was not restored to health for sixty-five days. Soon after he attained his sixtieth year, he observed that the left side of his abdomen increased in size, and he felt in that situation a tumor, which did not, however, become painful until the end of December last. From that time his health declined, without any particular malady;—he continued to eat and drink, and was not confined to his bed. On the 16th of February, he felt a sensation of heat rising to his head; soon after, his face assumed a bluish cast; he complained of head-ache and deafness, but did not lose his recollection. After some remedies had been ineffectually tried, he died on the 19th, at three o'clock in the morning. On opening the body, all the internal membranes appeared very highly coloured, but without thickening or alteration of texture. The colour was derived from vessels gorged with a thick blood, the colour of the lees of red wine. The same coloured fluid filled the vena cava, the aorta, the auricles, and the heart. The blood was not coagulated, neither could it be called fluid; it was nearly the consistence of *bouillie;* it was of a reddish-black colour, analogous to that of the lees of pure red wine, or to that of the matter of abscesses which are sometimes formed in the liver. This was the case over the whole body; in no part did the blood present its natural character. The spleen weighed ten pounds; the liver was double its usual bulk; but neither of these viscera were disorganised, nor was there any alteration of texture to be found in any part, excepting some ulcerations in the descending aorta, and some of its principal branches; the veins were healthy. It may be remarked that the change in the appearance of the blood was such as to induce a question whether the vessels were not filled with purulent matter.—*Archives Generales*, Mars.

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18. *Strangulation of a portion of the small Intestines.*—M. Esquirol relates a remarkable case of strangulation of a portion of the small intestines. An accidental bridle united the broad ligament of the uterus on the right side with the rectum on the same side. A portion of intestine had passed, in the first place, between this bridle and the sacrum, afterwards through the same band and the anterior parietes of the abdomen, and had lastly entangled itself between the sacrum and the bridle, so as to

form a kind of running knot. The woman who had been the subject of this strangulation died, at the end of a few days, of the symptoms which this accident usually produces.—*Ibid.*

19. *On the Use of the Oil of Croton in Inflammation of the Bowels.*—Professor Morichini, of Rome, wishing to ascertain whether the use of this remedy might be permitted in inflammatory affections of the bowels, prescribed it in two cases of gastro-enteritis. They were both females. One drop of the oil was mixed with an ounce of simple syrup, and administered in two doses, with an interval of two hours between each. The first patient did not experience any sensation of heat in the fauces. Two hours after, the bowels were moved, and during the night thirteen stools were procured, which produced much prostration of strength, but no pain comparable to that which she had suffered. The other patient, aged seventy-five, when seen by the Professor, had fever, with acute pain and tension in the abdomen, hard pulse, flushed countenance, anxiety, nausea, and constipated bowels, for seven days; although many glysters, with oil and common salt, had been thrown up. At three o'clock she was bled to the amount of twelve ounces; had her abdomen fomented, and an oily embrocation used, besides glysters of decoction of marshmallow and oil. At eight o'clock in the evening, one drop of the oil of croton, in an ounce of syrup of marshmallows, was ordered to be given in two doses, with an interval of two hours between each, provided the first produced no effect. The first dose, however, procured seven evacuations, which followed each other rapidly. The woman slept afterwards; and, though some fever remained the next day, it was only necessary to continue the fomentation, with demulcent drinks, to complete the cure.

From the result of these cases, the Professor is inclined to think that, although it would not be proper to administer this medicine in the height of an inflammatory attack, yet when, by means of bleeding, copious warm dilution, and other means, abdominal inflammation is in some measure allayed, the oil of croton may be administered, without any apprehension of reviving the phlogistic state,—or rather, indeed, with a certainty of overcoming it altogether.—*Annali Universali*, Dec.

20. *Various Morbid Alterations in New-born Infants.*—M. Bricheteau lately read, to the Academie Royale de Medicine, a report on the work of Dr. Veron, containing three cases, in which the fœtus had been affected with inflammations, similar to those which affect the adult. In one of these, a child, which only lived twelve or fifteen hours, the post-mortem examination led to the discovery of a pleurisy,—viz. effusion of purulent fluid in the thorax, formation of false membrane on the pleura,

redness and injection of vessels. In the second, the infant presented traces of peritonitis; and in the third there had been inflammation of the thymous gland, with the formation of pus in the interior of that organ. M. Bricheteau added other facts to those of M. Veron: for example, he quoted instances in which children were born with small-pox; a circumstance confirmed by the experience of various other members of the Academy. M. Désormeaux gave the history of a child who was born with every symptom of an intense enteritis of long standing, and which was cured. M. Husson lately opened, at the Hôtel Dieu, the bodies of two infants,—one born dead at the seventh month, the other which only lived eight days,—both of which had tubercles, already softened, and in a state of suppuration: the former in the lungs, although the mother was in good health; the latter in the liver. MM. Dupuy and Andral mentioned having found tubercles in the fœtuses of some of the lower animals; and M. Andral, in opening the body of a woman who died of phthisis, found the supra-renal capsules of the fœtus inflamed and suppurated.—*Archives General*, Mai.

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21. *Use of the Kali Hydriodinici in Cutaneous Cancer.*—Dr. Grafe, of Berlin, has published a few short remarks upon the curative power of the kali hydriodinici in cutaneous cancer. In the case of a woman whose breast was affected with this disease, and who had in vain employed other remedies, an ointment, composed of one drachm of the above preparation and two ounces of simple ointment, was applied once a-day. The wound soon assumed a healthier appearance; the callous edges disappeared, and cicatrisation soon began. The strength of the ointment was now doubled. The healing of the ulceration proceeded rapidly, and in the course of a few weeks it was quite well.

In cancerous affections of the upper lip, also, the same preparation has been employed with much advantage.—*Journal fur Chirurgie, &c.* Grafe and Walther; band 7, stuck i.

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22. *The Use of the Rhus Toxicodendron in Palsy of the Limbs.*—A young man, twenty years of age, of a strong frame, but stupid mind, was admitted into an hospital for a rheumatic affection, which passed off. He subsequently complained of no pain; he ate and slept well. The muscular power of his hands and feet was diminished, and they were almost useless; the fæces were sometimes passed involuntarily. As this symptom was attributed to his natural stupidity, he was threatened with punishment. The power of his limbs was now so completely lost, that he was obliged to be dressed and undressed like a child. In a short time he could not even move his fingers, and was incapable of feeding himself. Various remedies were ineffectually employed; amongst others, the phosphorus in an emul-

sion. Two days after the use of this article, he became perfectly jaundiced, and was attacked by fever. The relater of the case was now "at his wit's end;" he knew not what to do, and therefore determined to do nothing. In a few days, the last-mentioned symptoms passed off. The appetite returned, and the palsy of the extremities alone remained. He improved so much in general appearance, that another effort was determined upon, to endeavour to afford him relief. Upon the principle of Celsus, that it is better "anceps remedium experiri quam nullum," the rhus toxicodendron was given,—a drop night and morning. In eight days, the patient could move his fingers; in a month, the arms and feet. The dose of the remedy was gradually increased to ten drops. In two months, he had the perfect use of his limbs. He was shortly quite restored to bodily health; but still remained in a state of mental imbecility.—*Allgemeine Med. Annalen.* Jan. 1825.

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23. *Large Calculus passed from the Female Urethra.*—A case is related by Dr. Sommer, in the *Journal der Chirurgie und Augen-Heilkunde*, (band 7, heft i.) in which a female, of nineteen years of age, after suffering from severe pain in passing her urine, and occasional retention of it, had a catheter introduced, by which a stone was discovered obstructing the passage. The urethra was dilated by forceps; the stone was grasped by them, and withdrawn. It was found to weigh ten drachms and a-half; its long diameter measured two inches and a quarter; the transverse diameter was one inch and a quarter: it was of a whitish gray colour, tolerably hard, and rough upon its superficies. The patient soon recovered.

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24. *Extirpation of the Clitoris.*—An interesting, but unnecessarily detailed, account of this operation is given in Grafe and Walther's *Journal der Chirurgie und Augen-Heilkunde*, (band 7. stuck i.) The subject of it had existed in a state of complete idiotism from a very early age. Many ineffectual endeavours were made to afford relief by several celebrated German practitioners, as it was considered that the mental affection was dependent upon corporeal disease, and therefore susceptible of cure. At the age of fifteen years, the wretched creature was still living, in a complete state of mental imbecility; and it now became necessary to confine her arms in bed, to prevent her from committing incessant masturbation. As her intellectual faculties had for a short time appeared somewhat improved, it became a matter of considerable importance to put an effectual stop to the vice, which would so certainly have been the cause of her remaining in a state of mental hebetude.

After many fruitless efforts to effect this purpose by other means, the extirpation of the clitoris was had recourse to, in the month of June. The patient was watched, and her libidinous propensities gradually decreased. From this time her mental powers slowly improved. She learnt to write her letters, and was capable of receiving other instruction. She endeavoured to atone for her imperfect powers of speech, by expressive signs. She made some progress in music.

Two conclusions are drawn from this case, by the anonymous relator of it:—

1st. That idiotism is curable, if it is not dependent upon some congenital malformation.

2d. That onanism, particularly when carried to excess, will confirm a state of idiotism.

It is observed that, although the disgusting practice of masturbation undoubtedly confirmed the mental imbecility of the patient, it might still be difficult to determine the primary cause of the idiotism. Self-pollution could hardly have taken place at a very early age, and yet the state of fatuity was complete; and the latter part of the treatment consisted almost entirely in overcoming the disposition to the commission of the vice referred to.

25. *On Closure of the Pupil in Iritis.* By Wm. Mackenzie.—Although obliteration of the pupil is by far the most important symptom in iritis, hitherto no explanation has been offered of this remarkable morbid change.

The mere inflamed state of the iris seems quite insufficient to explain it. The effusion of fibrin into the posterior chamber is sufficient to account for the pupil not opening again; after it is once closed, but does not account for the closure in the first instance. Intolerance of light is not the cause, for in general this is not an attendant on iritis. Inflammation of the retina is not the cause; for, although occasionally the inflammation in iritis does spread to the more deeply-seated textures of the eye, it is much more common to see the pupil completely obliterated, while the retina continues sound, so that vision may afterwards be restored by the formation of an artificial pupil.

In the Lectures on the Structure and Diseases of the Eye, which I have given for the last seven years, I have ventured to ascribe the closure of the pupil in iritis to the fact, that the natural state of that opening (the state into which it falls during the insensibility of sleep,) is closure, not expansion. The discovery of this fact we owe to Fontana;* its truth has been acknowledged by Janin† and Cuvier,‡ and may easily be ascertained by any inquirer. Approach a child fast asleep, and sud-

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[*] Dei Moti dell' Iride. Lucca, 1765; page 21.

[†] Mémoires sur l'Œil. Lyon, 1772; page 8.

[‡] Leçons d'Anatomie Comparée, tome ii. page 409.

denly raise the upper eyelid; the pupil will appear all but closed, and only gradually, as the state of sleep is broken, will it be seen first of all to expand, and at last to accommodate itself to the degree of light to which the eye is exposed.

Iritis is always aggravated, and often appears to commence, during the night, particularly after the operations for cataract. The probable cause of this is the contraction of the pupil, or rather the expansion of the iris, during sleep. Hence the propriety of applying the extract of belladonna to the forehead every evening, particularly in cases of incipient iritis.

If no means are used to counteract the progress of iritis, the pupil is observed to become, day after day, smaller and smaller, and less and less dilatable, till it be completely closed and bound down by effused fibrin to the anterior hemisphere of the crystalline capsule. If belladonna only be employed, without the detraction of blood and the exhibition of mercury, the pupil will be kept dilated; and, if the narcotic has been applied early in the disease, the pupil will be widely expanded, and in this state will become adherent to the crystalline capsule. The detraction of blood, to lower the sanguiferous action,—the use of mercury, to prevent the effusion of fibrin, or to bring about its absorption, if already effused,—and the application of belladonna, to counteract the return of the iris to its natural state of rest, relaxation, and expansion, during sleep, makes up, then, the chief parts of the treatment of iritis, whether the disease be traumatic, atmospheric, or syphilitic; and the belladonna ought to be applied, not irregularly or merely every second or third day, but regularly every evening.—*From the London Medical and Physical Journal*, *August*, 1825.

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26. *Remarks on the Medicinal Properties of the Croton Oil.* By Ed. Tegart, Esq. Inspector of Hospitals, &c. &c.

London, 22*d May*, 1825.

Sir,—Regular and liberal-minded medical men have ever considered it a duty they owe to their professional brethren, as well as to society in general, to communicate whatever (whether it may be the result of scientific research and discovery, or useful practical experience,) they may conceive beneficial to mankind, in preserving health, in alleviating pain, or in curing disease. Acting upon this principle, I feel myself called on to state, that I have witnessed so much benefit from the use of a medicine imported into this country by you a few years ago,—I mean croton-oil,—that I cannot, in justice, withhold from you the high opinion I entertain of its great efficacy in many diseases.

Early in 1821, which was soon after the croton-oil became known in England, I was appointed to the superintendance of the medical department in the West Indies; and, as I had seen some, and heard of many extraordinary cases of its powerful effects as a purgative medicine, I was forcibly impressed that it would prove an important remedy in the diseases of that country. I therefore took out with me a supply, in order to give it a fair trial. I take credit to myself for having been the first who introduced it into that part of the world, the diseases of which it appeared to me so eminently calculated to oppose. I sent a small quantity to all the colonies and islands, with a circular letter addressed to the principal medical officers; a copy of which I shall subjoin to this statement. I will also add an extract of a letter from me to the director-general of the army medical department, on receiving the required communications from those officers.

The Reports from the different stations fully confirmed the favourable opinion I had formed of this medicine. These documents were sent by me to the board at home; and, should you wish to see them, or to obtain extracts from them, you will find every facility, the director-general and principal inspector being at all times desirous of imparting to the profession, and to the public at large, any and every part of the important information which they are constantly receiving from their officers stationed in every part of the world occupied by British troops.

Besides the official reports from the army medical officers, numerous cases were transmitted by them, as well as civil practitioners, which I now regret were left at Barbadoes, because they might have been useful, as furnishing undoubted testimonials of the variety of diseases in which the croton-oil was employed, and the success which attended its exhibition. It not only proved an active remedy in acute affections requiring depletion, but a stimulant one also in chronic visceral complaints: even when water had been deposited in the abdomen and chest, it acted as a powerful hydrogogue.

Dr. Lefort, physician to the king of France, and chief of the medical staff in the French West-India colonies, having heard of the success of this medicine in our islands, requested from me a small quantity. He was so much satisfied with its effects, that he immediately sent to London for a large supply; he has, no doubt, reported its success to his own government. This gentleman has lately published an excellent work on yellow fever, and, as he is an able and scientific man, he will soon discover that croton-oil is not to be confined solely as a purgative, and he will administer it, as we have done successfully, not only in our military hospitals, but by the private practitioners throughout our colonies, in all cases requiring depletion, either by the alimentary canal, kidneys, or skin.

When I first saw the croton-oil prescribed in England, it was given with the sole view of emptying the bowels; but experience in the West Indies soon convinced me that it was an excellent febrifuge medicine, after the first object had been attained. Dissolving it in spirits of wine, and then diluting it in any palatable vehicle, so as to give it in the proportion of about half a drop for a dose, every three or four hours, it keeps the bowels open, increases the urinary discharge, and relaxes the skin: these are important objects to gain at the commencement of all febrile affections.

Pyrexial attacks in tropical climates, but especially amongst soldiers and sailors, who, from intemperance and irregularity, are exposed and predisposed to such, are almost always attended with torpid bowels, constricted skin, and great determination of blood to the head. In such cases, the indications, of course, are to remove those symptoms; and I have seldom or never seen two or three drops of croton-oil fail in effecting that end. The lancet and warm baths are, however, generally employed at the same time in such cases. I have never known this oil disappoint my views when given as a purgative, and administered in proper time; but I have known some cases, and have heard of many, in which it has failed to operate. I am inclined to think those failures happened from too long delay, and that gangrene had taken place. Certainly I have known it act powerfully in many cases where calomel, scammony, gamboge, and other drastic purges, have been employed in vain.

With the exception of apoplexy and coup de soleil, I am not aware of any other disorder in which the croton-oil is employed with more evident effect, than in yellow fever. In this disease there is generally incessant vomiting, with obstinate constipation of the intestinal canal. To remove this obstruction, is a most important measure with the medical attendant: but how is he to accomplish this, as no medicine hitherto discovered could be retained on the irritable stomach? Two or three drops of this oil, applied to the tongue, will soon find its way to and through the stomach, thereby relieving that organ, by giving another direction to its morbid secretions. To relieve the sufferings, or to lessen the ravages of this formidable disease, would be a desideratum in our art. No remedy, that I have yet heard of, has done, or is likely to do, so much good as the one in question. In short, I think so highly of it, and consider it so valuable a medicine, that I have recommended it to be (and I hope it will be,) a permanent article in all military medicine chests.

In concluding this letter, I would beg to suggest to you, that every possible precaution may be taken by you to prevent the adulteration of the croton-oil, as I am informed that, in many instances, ten or fifteen drops have been given to produce the desired effect. You will, I am sure, best consult your own advantage, as well as public benefit, by preventing such wicked and dishonest practices on the part of the retailers of this medicine. I would further recommend that glass stoppers may be used instead of corks for the phials, as it is often found difficult to extract these corks, which are frequently decayed, probably from the action of the oil.

I am, Sir, your very obedient, humble servant,
EDW. TEGART, *Inspector of Army Hospitals.*
To Arthur Short, Esq. No. 11, Ratcliff Highway, London.

Copy of a Circular Letter from Inspector of Hospitals Tegart, *to the principal Medical Officers of Stations in the Windward and Leeward Islands.*

Head-quarters, Barbadoes, June 21st, 1821.

Sir,—Herewith I send you a small phial of the oil of the croton nut, which has been lately imported into England from the East Indies. In that country it was found eminently useful as a purgative medicine, exciting the secretions, relaxing the skin, and acting on the whole system as a most efficient febrifuge.

It has been used in the public hospitals and institutions of London, with decided success. I myself have exhibited it, and seen it given by others, with an astonishing good effect. The facility of conveying it into the stomach (one drop being a dose,) and the quickness of its action, will render it a most important remedy in our materia medica. In apoplexy, I have known a patient, insensible and incapable of swallowing, purged and rerelieved in one hour, by merely putting one drop of this oil on the tongue.

From what I saw of this medicine, I augured most favourably of its powers in the ardent remittent and yellow fever of the West Indies. I was therefore induced to bring with me a small quantity, for the purpose of trying its efficacy. Should the result prove favourable, I will make it known to the board, and request that a supply may be sent out for the use of the colonies.

The dose of this oil is from one to three drops; I have generally given two. In severe and sudden cases, such as apoplexy and coup de soleil, two drops on the tongue will be found sufficient. When there is irritability of stomach, it will be proper to give it in two ounces of peppermint-water, (rubbed down first with a little mucilage;) for it sometimes creates nausea and sickness. When given alone, it excites great heat in the mouth, which lasts for a considerable time.

How this oil acts, will afford ample subject for physiological discussion. From the sudden stimulating effect it produces, when applied to the epidermis; from the warmth it communicates to the œsophagus and stomach, and from the increase of the peristaltic motion, we may suppose it acts directly on the sensorium. I have witnessed a case of tic doloureux cured by it, when given with the intention only of removing a torpor of the bowels, which usually attends that disease.

In making this statement, it is far from my wish to create a prejudice in favour of this medicine. I am anxious to have it fairly tried, and reported upon. I am to beg you will make a selection of a few cases, watch attentively the effects, and give me your opinion. I trust it may be a long time before you will have an opportunity of giving the croton oil in yellow fever; but other fevers we may expect to witness daily in this climate, which, if benefitted by this means, may give fair grounds to hope that it may be advantageously employed when that formidable disease again appears amongst us.

I have to request you will, with as little delay as possible, make this experiment at ——; and communicate to me the result, by detailing a few cases, together with the form in which you have ordered the medicine. It will be but fair to aid its operation with the lancet, which, I believe, is now generally practised in all recent attacks of fever. It will be well, also, not to confine the experiment to acute diseases; because I think the remedy will be found very useful in chronic cases, particularly where visceral obstruction exists. I shall not fail in apprising you of the collected opinions on this subject, after the reports arrive at head-quarters.

I have the honour to be, Sir, your most obedient, humble servant, (Signed) EDW. TEGART,
Inspector of Hospitals.

Extract of a Letter from Inspector of Hospitals Tegart, *to* Sir James M'Grigor, Director-General Army Medical Department.

Barbadoes, 30*th November*, 1821.

A short time before I left London, a purgative oil, of a very extraordinary character, had been imported from the East Indies: the qualities ascribed to it were such, that I thought it my duty to give it a trial in this country. I purchased about thirty bottles for that purpose: and, soon after my arrival, I sent one or two to each of the islands and colonies in the command, in order that its effects might be ascertained, and reported upon. Herewith I have the honour of transmitting a copy of the circular letter written to the principal medical officers on the occasion.

As only very few have reported on the croton-oil, I will withhold them until the others arrive, and send them all at the same time. I will now merely send for your perusal a few extracts from letters on the subject, by which you will see that this medicine is highly estimated and extolled by some, although not noticed by others. For my part, my mind had been decided on its powers before I left England; and I have reason to think I shall not be disappointed in my expectations of it in this country. It is a remedy that, I think, will make its way, in spite of prejudice and opposition; and it has many opponents,—some from, perhaps, commendable caution, in not using a medicine until time and practice have ascertained its effects; and others from prejudice in favour of their own particular remedies, which long practice has convinced them that no others can equal or surpass.

The croton-oil will, I think, be found a most powerful remedy in many diseases, both in high and low latitudes: between the tropics, I think, it will be particularly so, from the rapidity of its action on diseases where delay is death. The facility of administering it, and the certainty of its action, are strong in its favour. It is now much known in this island, and I have had frequent applications from the inhabitants for a little, but my means of supplying are now very limited, as I have only a few bottles left. I did not intend making a requisition until I could accompany it with the reports from the out stations; but, as they are not all arrived, and as my stock is so small, I am under the necessity of requesting that you will be pleased to direct a supply of one hundred bottles, to be sent out by the packet, should the yearly supply of medicines have left England before this arrives; but, if they are not yet embarked, the croton-oil may be forwarded at the same time. I enclose the address of the person in London from whom I purchased what I brought to this country, and who is the only person that sells it.

Extract from Inspector of Hospital Tegart's *Annual Report for* 1823, *addressed to the Army Medical Board.*

Barbadoes, 28*th February*, 1824.

There are very few of the annual or occasional reports from the colonies, that do not record fresh instances of the powerful effects from this medicine (croton-oil.) It is gaining ground in reputation every day; and will ultimately overcome (as I predicted last year,) the prejudices which were entertained against it. The smallness of the dose and its active operation, occasioned fears in the minds of those who had not seen it given: these alarms have now ceased, and it is considered perfectly safe. The heat and irritation in the mouth and fauces are against its exhibition; but what man of sense would hesitate, from so trifling an inconvenience, to administer it in an important and dangerous disease.

I always feel gratified in reflecting that I introduced this remedy into this country, where their is such a field for displaying its powers. The best and most flattering account I have yet seen of its efficacy, is from the chief of the medical staff of the French islands, Dr. Lefort, who has requested me to order him a supply to be sent from London to Martinique. He recommends its exhibition in form of pills, to prevent the burning sensation when given in a liquid state. I began its use by dropping it on the tongue, and, having witnessed in that way its constant and unvaried success, I am unwilling to alter the mode of exhibition. I should apprehend it might not have the active and immediate effect, if it did not come at once into contact with the epidermis and lining membranes of the stomach.

27. *Employment of Caustic to destroy the Variolous Eruption.*—M. Velpeau read a memoir to the Royal Academy of Medicine, tending to prove that, if the pustules of the small-pox are cauterised within the two first days of their appearance, they die away entirely; and, if this is done even later, their duration is abridged, and no traces of them are left. The caustic he employs is a solution of nitrate of silver, in which he dips a probe, with which he pierces the centre of each pustule. M. Dumeril says that he has been long familiar with this practice, but, instead of the solution, he employed the solid caustic itself.—*Archives Generales*, Juin.

INTELLIGENCE.

No. XIV. of the New York Medical and Physical Journal, has appeared under a new editorial arrangement. With Dr. Beck, who has heretofore so ably conducted this valuable work, are associated Dr. Peixotto and Dr. Bell, Professor of Anatomy in the University of Vermont. The Medical Periscope of the city of New York, which furnishes so wide a field for observation, must certainly yield much that is interesting and instructive. The talents of the above gentlemen are amply adequate to the occasion. Dr. Beck, particularly, is well known as one of our most classical medical writers.

We think that a work of this character, emanating from such a source, should be in the hands of every practitioner in our country.

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ART. I.—*An Essay on Tetanus, founded on Cases and Experiments.* By JOSEPH SWAN, Member of the Royal College of Surgeons, and Surgeon to the Lincoln county Hospital. London, 1825.

IN the whole range of Medical Science there is no disease which exhibits more strong and expressive pathognomonic features than the subject of the above essay. Whether we regard the obscurity of its nature, the cruel severity of its symptoms, or the uniformity of its fatal result, it surely presents, even to the veteran in medicine, an appalling aspect. Precisely in the same degree should it be a subject of observation and inquiry. Some, however, may regard the ill success which has hitherto attended our labours in relation to this disease, as a circumstance indicative of our inability ever to develope the seat and immediate cause of its morbid phenomena. Had our *physiological* investigations already reached the limit prescribed to our sentient and rational powers, it would be wise in us to abandon at once the pursuit of an object which has foiled the attempts of the most discriminating. With the same data we cannot expect to accomplish more than those who have immediately preceded us; but when we consider that, particularly for the last few years, our knowledge of the offices performed by the constituent organs of the system, and their relation to each other in health, has been rapidly progressing, we may, without arrogating to ourselves any intellectual superiority, expect to effect a corresponding advancement of the collateral branches of medical science. That department of physiology which has a direct bearing upon the pathology of the disease in question, has recently been cultivated with peculiar zeal and success. The labours of Bichat, Philip, Brodie, Bell and others, have accumulated numerous facts in relation to that most obscure class of vital phenomena, those of the nervous system, and although they are not as yet sufficiently numerous to admit of being reduced to scientific arrangement, they certainly offer many suggestions to direct our inquiries, particularly in relation to the diseases of the nervous and muscular systems, and also to recall us from the pursuit of vain speculations.

It is the importance of the subject, and the occasion which we think is presented of advancing the pathology of the disease to a correspondence with what we now know of the healthy functions of the nerves and muscles, rather than the character of the essay which we are about to examine, which induces us to employ it as a precursor and apology for an attempt of our own. We will not say, however, that the suggestions of our author are not worthy of consideration. They certainly come from a respectable source, and are sanctioned by the approbation of those whose opinions are not to be passed over in silence. We would by no means pre-occupy the minds of our readers against the peculiar views of our author, but proceed immediately to present such an analysis of his facts and inferences as shall enable each to pass an unbiassed judgment upon the merits of the work. We shall then offer our own remarks in relation to the correctness and importance of our author's conclusions, and finally subjoin such observations in relation to the pathology and treatment of the disease in question, as may render this article more complete and useful to our readers.

The following extract from the author's preface will acquaint the reader with the object which he proposes:

> " The opinions I have stated in the following pages, were formed from the consideration of appearances which presented themselves to me on dissection. The first time I had an opportunity of making a complete examination of the body of a person who had died of Tetanus, was in May, 1823. I then perceived an unhealthy appearance of many of the ganglia of the grand sympathetic nerves; as this was quite unexpected, for a similar one had not been recorded by medical authors, I could not form a decided opinion respecting it, as will appear from the following passage.* ' In this examination, no part of much importance, except the ganglia of the grand sympathetic nerves, decidedly deviated from the healthy state; and, in the present state of our knowledge, I conceive it difficult to determine whether the appearances were in any way connected with the disease; or were caused entirely by the submuriate of mercury, the opium, or the spirits of turpentine.' In the following November, I dissected the body of another person who had died of this disease, and found the ganglia of the grand sympathetic nerves having a similar appearance. I now began to think that the altered state of the ganglia might be the cause of the disease; and I soon determined on making experiments with a view of either confirming or refuting this opinion; but I was then prevented from executing what I had proposed. I had, however, in the mean time, the satisfaction of finding that similar appearances had been observed by Dr. Aronssohn,† at Strasburg; and whilst I was making some experiments, a case occurred to my friend Mr. Thomas Macaulay, who very kindly afforded me the opportunity of being present at the examination of the body after death, when I was again enabled to witness appearances in the ganglia of the grand sympathetic nerves very similar to those I had before seen. M. Andral Fils‡ has also discovered a great redness of the semilunar ganglia in a patient who laboured under fever, and died with symptoms of tetanus.

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* An Inquiry into the Action of Mercury on the Living Body, page 12. Second Edition.

† Lobstein de Nervi Sympathetici Humani, Fabrica, Usu et Morbis, page 152.

‡ Clinique Medicale, tome i. page 419.

"When I had nearly finished my observations on this disease, I read the opinions of Dr. Good,* and also those of Mr. Abernethy.† The latter gentleman says, 'When the irritable and sloughing state of the wound shall have gone off, when healthy granulations have formed, and the cicatrix is rapidly advancing, in this state tetanus may occur. How are we to account for this? I am inclined to think that it is to be accounted for in the following manner. We know that the disposition to disease occurs long before the action of the disease takes place. In the painful and bad state of the wound, the disturbed state of the nervous system has produced disease of the digestive organs which reacted on the nervous organs; so that the disorders have reciprocally aggravated one another; so that at last, even though the wound is drawing to cicatrization, or has even healed, and there is no longer any local irritation, the disposition to tetanus, from the established irritation of the cerebral and visceral functions, comes into activity. Perhaps those who know nothing of the opinions I have formed on subjects of this kind, may not thoroughly understand what I mean. I propose this as a question to surgeons, whether the disordered state of the digestive organs, established during the irritative state of the wound, may not be the occasion of tetanus when that irritative state has ceased?'

"If what I have written amounts to the same as is expressed in the preceding paragraph; if, likewise, some of the opinions I have advanced are the same as those advanced by Dr. Good, and there is any merit in the following pages, I shall willingly rest satisfied in having proved by dissection and experiment, what those gentlemen have so ingeniously proposed."

In chapter I., on constitutional irritation, the author adduces a number of cases and experiments in illustration of the kind and degree of influence which local injuries exert upon the organs which derive their nerves from the ganglionic system, as the heart, lungs, and digestive organs. This is evidently a more general proposition, and preliminary to those facts and arguments by which he substantiates his opinion, that in tetanus the local disease first influence the ganglia of the sympathetic, from which as a centre the morbific principle is diffused through the system. As the cases are similar, and illustrate a principle common to them all, it will be sufficient if I quote but one, that our readers may know the character of the data upon which our author proceeds:

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* Lancet, vol. v. page 72.

† Study of Medicine, vol. iii. page 323.

> " *Case.*—Susanna Graham, a stout-looking girl, æt. seven years, was burnt by her clothes catching fire on the 20th of August, 1823, at noon. The thighs, and arms and back were the parts affected; but some of them appeared to be burnt deep. The skin of the abdomen was not burnt. She did not appear to suffer much pain. Mild ointment was applied to the affected parts.
>
> "21st. At ten A. M. she complained of pain in her belly. She had vomited several times. She wandered a little and was cold, and her face was death-like. She said she remembered me. The pulse could not be felt in either arm. Purging medicines were given her, but they did not remain in the stomach.
>
> " In the evening the pulse was perceptible, but she appeared weaker and was quite insensible; the pupils of the eyes were much dilated, and did not contract on the approach of light, but she could see, for she attempted to blow out the candle. Six leeches were applied to the temples. She died at one A. M. on the 22d.
>
> " *Examination.*—The lungs were very purple and loaded with blood. There were spots of ecchymosis behind the posterior mediastinum on the left side; there was a great vascularity on the outside of the aorta; there was some fluid in the pericardium.
>
> " There was an increased redness on some parts of the omentum, but the peritoneum appeared healthy. The liver was generally pale, and especially on its concave surface. There were some spots of redness on the villous coat of the stomach, but I could not decide that they amounted to disease. About six inches of the jejunum were highly inflamed.
>
> " All the ganglia of the grand sympathetic nerves in the chest were vascular. On the right side, the semilunar ganglion and all the rest of the ganglia in the abdomen were very vascular. On the left side, the semilunar ganglion and the first in the abdomen formed by the continuation of the grand sympathetic nerve, were very vascular, but the others were not. The nerves of each axillary plexus were very vascular. The sciatic nerves within the pelvis and the anterior crural

nerves were vascular, but not near so much so as the axillary plexus.

"After every accident in which the constitution sympathises with the injured part, I believe, the ganglia of the grand sympathetic nerves become irritated, and the functions of the parts supplied by them with nerves are disturbed in consequence. The action of the heart is increased in proportion to this degree of irritation in them, so long as it continues moderate.

"Though an injury in the first instance has been slight, or such as does not usually occasion much disturbance; yet if the constitution be irritable, or the body exposed to cold or other causes of disorder, it will produce a very considerable disturbance, not unlike what arises from a more serious injury."

The experiments performed by the author upon living animals are nine in number, and have for their object the illustration of the same principle, viz. constitutional irritation from local impressions through the medium of the sympathetic ganglia:

"*Experiment.*—One portion of oxyd of arsenic weighing thirty-nine grains and three quarters, and another portion weighing twenty-six grains, were moistened with water, and inserted into a wound in the back between the shoulders of a very large dog, on the 18th of April, 1823, at half past seven, A. M. Soon after I laid my hand over the wound so as to press the arsenic to the back, and he immediately had twitchings in different parts of the body. He ate with a good appetite. Involuntary contractions of the muscles of the face continued throughout the day, so that the teeth would frequently be brought close together with a snap. He has neither vomited nor purged.

"19th. He is much the same as yesterday. Twenty-five grains of powdered oxyd of arsenic were given him on a piece of meat at a quarter before eight, A. M. At half past nine he had not vomited. At one he had vomited several times, and, I believe, nearly the whole of the arsenic was rejected, as the symptoms continued just the same as before he took it.

"20th. He is much the same. He has not vomited again. He has no appetite. The same twitchings of the face continue.

"23d. He is very weak. An abscess broke on the right side, and as it was presumed no advantage would result from prolonging his existence, he was hanged.

" *Examination.*—All the ganglia of the grand sympathetic nerves were inflamed. The par vagum and nerves about the face, had a greater redness than usual, and a slighter degree of it existed in the axillary plexus. The sciatic nerves were natural. All the thoracic viscera were healthy, but there was an increased vascularity on the outside of the aorta. There appeared more than usual redness on the peritoneum of the stomach, but not on that of the other viscera. The villous coat of the stomach was ulcerated in several places, and that of the small intestines presented an appearance of red spots. There were red spots and bloody mucus on the inner coat of the rectum. Neither the brain, nor the medulla spinalis, nor their membranes had any increased vascularity. The ganglia of the spinal nerves were more vascular than natural, but those formed by the fifth pair had not any increased vascularity.

" The largest piece of arsenic weighed full thirty-eight grains, and the smallest twenty-four grains. There was much inflammation on the skin to some distance round the place where the arsenic was inserted. The abscess had formed near the shoulder."

Several other experiments were performed by inserting arsenic and gamboge in the flesh of living dogs with similar results:

" *Experiment.*—1815, Jan. 20th. A large bitch received a compound fracture of the tibia and fibula of the left leg, at a quarter past ten, A. M.

" At half past eight, P. M. She does not appear to suffer much, and has eaten with a tolerable appetite.

" 22d. Yesterday and to-day she has eaten very little. This morning she was thirsty, and had frequent involuntary contractions of most of the muscles of the body. She was hanged at noon.

" *Examination.*—This took place at one, P. M.

" All the ganglia of the grand sympathetic nerves in the abdomen had an increased vascularity, but it was the greatest in those of the left side. The first thoracic ganglion of the left side had a slightly increased vascularity; that of the right side was quite white.

" The viscera of the thorax were sound.

"The viscera of the abdomen appeared too vascular. The stomach was much contracted, and almost empty; its villous coat was red, but not diseased. The villous coat of the small intestines was very highly inflamed, but not ulcerated. The mucous coat of the large intestines was too red. All the absorbent glands appeared in a state of irritation.

"There was a transverse fracture of the bones. The periosteum was separated to a short distance, and much thickened. There was much inflammation of the cellular membrane, and a corresponding serous effusion a little above the wound, and likewise as low as the os calcis. There was a much greater vascularity in the groin on the left side than on the right. The cellular membrane surrounding a small portion of the saphenus nerve near the fracture was inflamed; the remaining part of this nerve, and all the anterior crural nerve, were quite healthy. There was the same appearance in the branches of the sciatic nerve near the fracture, but there was rather more vascularity in the left than in the right sciatic nerve."

In chapter II., the author enters upon the consideration of idiopathic tetanus. This species he regards as differing from the traumatic only in its remote cause, and adduces cases to prove that its more immediate source is a morbid condition of the sympathetic system. The first case, obtained from Mr. Thomas Macauley, is one of a child of ten years. The disease was apparently induced by cold. It exhibited the usual train of symptoms, and under a most puerile and irresolute treatment, terminated fatally on the third day. The following were the morbid appearances on examination:

"*Examination.*—On opening the abdomen a considerable volvulus was found in two portions of the small intestines. The intestinal canal was laid open through its whole extent. The stomach exhibited nothing remarkable, and contained only a little fluid and a few portions of the submuriate of mercury. The villous coat of the small intestines throughout had marks of having been in a state of great irritation; many very vascular patches were observed on it, and it was loaded with green and yellow slime and mucus; at the superior extremity of each volvulus, several lumbrici were lodged, and others were found in different parts of the canal. The colon was irregularly distended with air, and presented rather a curious appearance; its mucous coat was healthy, and contained a few ascarides; the rectum contained fæces which had not an unhealthy character. All the absorbent glands were enlarged, but those in the abdomen were very vascular, and the mesentery throughout had the same appearance of undue action and irritation. The bladder was thicker than usual, but was not otherwise unhealthy, and contained urine.

"The lungs were florid and loaded with blood, but not unhealthy. A patch about the size of a shilling, and having the appearance of effused lymph, was found on the pericardium covering the apex of the heart.

"The ganglia of the grand sympathetic nerves were examined with very minute attention. In all of them there existed decided marks of irritation. The vessels usually pale and colourless were injected with red blood, and the same was observed in some of the intermediate portions of nerve. The vascularity could be distinctly traced before their removal from the body, and immersion in cold water for some time did not diminish it. The left semilunar ganglion exhibited a few vessels, but the right was injected in a beautifully minute manner, quite as much so, when seen through a magnifying glass, as the conjunctiva in a state of high inflammation. The same distinction, though not in the same degree, was observed between the two sides in all the portions of the grand sympathetic nerves which were examined.

"On opening the head, every part of the pia mater was found to be minutely injected with blood. The substance of the brain had a healthy appearance. Some fluid was in the ventricles and at the base; on the removal of the brain a quantity was found, equal to about two ounces. On hanging the head over the edge of the table the same fluid kept dribbling from the spinal canal.

"The spinal canal was laid open through its whole extent. The sheath of the dura mater seemed to be distended with fluid, but on being divided, was found to contain only air. The pia mater presented exactly the same appearance as that of the brain. The medulla itself was perfectly healthy.

"After death the limbs of the right side remained quite stiff, but those of the left were in a considerable degree relaxed.

"From the quick termination of the violent symptoms, the following case may not be regarded as one of tetanus, but the spasms were exactly the same as I have ever witnessed in the most violent form of the complaint."

The author also introduces a case translated from Lobstein

De Nervi Sympathetici Humani Fabrica Usu et Morbis, which, as it is brief, we transcribe:

> "*Case.*—A man,* æt. forty-seven years, had a fibro cartilaginous tumour removed by amputation, which adhered loosely to the spine. After an interval of two years he came a second time to the hospital, requesting to have another tumour removed, which had made its appearance, and the highest part of the skin of which was inflamed and ulcerated. Having first taken a purgative, and at the same time caught cold in the rainy season of October, he was immediately seized with trismus and opisthotonos, which in the space of two days destroyed him, after every medicine had been tried in vain.
>
> "On opening the body, nothing was found but a vascular network filled with blood on the surface of the medulla spinalis, and a quantity of serum effused within the sac formed by the dura mater; and a very distinct inflammation of the semilunar ganglia."

Several experiments are also related, in which artificial tetanus was produced by the use of nux vomica. The morbid appearances are stated to be similar to those presented by the spontaneous cases.

In chapter III., on Traumatic Tetanus, the author has the following remarks:

> "If traumatic tetanus always followed a very painful or extensive wound, there would be an apparently satisfactory reason for its violent symptoms, but as it likewise supervenes on a trifling injury, or a wound that is nearly or entirely healed, there is the greatest difficulty in comprehending how it is produced.
>
> "With a view of removing as much as possible this obscurity in the production of traumatic tetanus, I have been induced to inquire how the body is usually affected after accidents. From that inquiry I have been led to state, that when a severe injury has been received, the ganglia of the grand sympathetic nerves become irritated, and consequently the parts to which they distribute nerves. When the constitution is healthy, I believe the irritation of the gan-

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* Lobstein De Nervi Sympathetici Humani, Fabrica, Usu et Morbis, page 152.

glia goes off in a few days, and then the parts supplied by them with nerves return to a state of quietude, and again perform their healthy functions.

"When the ganglia of the grand sympathetic nerves have been thus affected, and the irritation has subsided, an unhealthy action in the wound may excite a fresh irritation in them. Or even if the wound be healed, the passions, improper food, and other causes, may continue, reproduce, or increase the disordered state of the organs receiving nerves from the ganlia, and thereby excite a fresh irritation in them.

"When the ganglia of the grand sympathetic nerves have once been in a state of irritation, I believe they are very susceptible of its renewal. When they have become again irritated, we can readily conceive that the irritation may be communicated to many of the cerebral and all the spinal nerves, and from these to the medulla spinalis, and we can then easily comprehend how tetanic spasms may be produced."

The following case being one of some interest we quote it entire:

"*Case.*—November 5th, 1823. Master John Patrick, æt. twelve years, had some serpents in his pocket, which caught fire and burnt the upper and fore part of the right thigh, the penis and scrotum, and a portion of the skin of the abdomen, extending above the navel and a short distance on the left side, but on the right, nearly as far as the spine. He had some fever, but never had vomiting nor any unfavourable symptom until the 14th.

"Mild ointment was applied to the burnt parts; he took saline medicines, and his bowels were kept open with a mixture containing sulphate of soda and senna. His appetite had returned, and the greatest part of the sloughs had separated, and the vacuities caused by them were nearly filled up by healthy granulations.

"On the 13th, he had not any appetite.

"On the 14th, he complained of pain at the stomach and a sore throat, but he could open his mouth very well.

"On the fifteenth the jaw became very much fixed, and he had some slight spasms. He had very great difficulty in swallowing. His head was bent backwards. He did not complain of pain. The sore continued to look well. He took musk, and the following ointment was applied to the sore.

℞ Pulv. Opii ʒij.
Ung. Cet. ℥iv. M.

"16th. The sore appeared quite dry. He was much the same as yesterday. The head was bent towards the right side.

"He died at two, P. M.

"The spasms were almost entirely confined to the face and neck. His breathing was much affected. The functions of the brain were never disturbed. He was well purged on the 13th, but after that no evacuation from the bowels could be produced. He would not allow an enema to be used. Mercury was not given.

"*Examination.*—This took place on the 17th, at half past two, P. M.

"The dura mater adhered to the skull with unusual firmness. When the dura mater was removed, at the top of each hemisphere of the brain, there was a granular appearance, which felt rough. The vessels of the brain were much loaded with blood. The pituitary gland was unusually soft. Every other part of the brain was perfectly healthy.

In the spinal canal within the sheath formed by the dura mater, there was a small quantity of fluid. The vessels of the pia mater, and especially near the cauda equina, were much loaded with blood. The medulla itself felt rather firmer than usual, but it had not the least unhealthy appearance.

"All the ganglia of the grand sympathetic nerves in the chest were very vascular. The right semilunar ganglion was rather more vascular than usual, the left had a pearly appearance, and was entirely free from any mark of blood-vessels. There was a little redness in a few of the other ganglia in the abdomen.

"The right anterior crural nerve had a singular vascular spot on it. The left anterior crural nerve, the right sciatic, and several of the dorsal nerves, which were particularly examined, appeared natural.

"The lungs and heart were sound.

"The peritoneum was quite healthy. The villous coat at the cardiac extremity of the stomach was exceedingly vascular, and on this part there was a large spot of ecchymosis. The bowels contained very little fæces, and had not an unhealthy appearance.

"Many of the absorbent glands in the abdomen had a remarkably red appearance.

"The burn had not destroyed the whole substance of the skin in some parts, and the fat underneath looked perfectly healthy."

The author then "proceeds to make a few observations on some of the *symptoms* of tetanus, and the parts which appear to be implicated in the disease, and then to inquire what inferences may be drawn from them as relating to the most probable method of cure." In regard to traumatic tetanus, our readers will probably recollect that Larrey and others have strenuously urged the early amputation of the injured part from which the disease is supposed to be diffused through the system. Our author, however, is of opinion, that when it has once become general, the centre of diseased action is no longer in the wound, but in the centres of nervous influence, and that the operation, although it may alleviate for a time, does not subvert the disease. This remark accords with our own observation, and, we believe, with the experience of most surgeons.

In drawing his general pathological inferences from the facts detailed in his cases and experiments, the author gives his reasons for not regarding either the brain or spinal marrow as the morbid centre. Although he recognises an increased vascularity of the pia mater of the brain and the spinal cord as among the morbid appearances, he thinks them by no means adequate to the general symptoms, and regards them as rather the effects of the general disturbance. The undisturbed state of the functious of the brain, even in the worst cases, he adduces as evidence of its not being particularly affected. That the spasm of the muscles is produced by an influence exerted through the medium of the nerves he appears to regard as unquestionable, and therefore, having satisfied himself that the cause can neither be seated in the brain nor spinal cord, it seems to be a necessary conclusion that the ganglia of the sympathetic must be the source of the morbid phenomena. The diseased appearances of these ganglia, recorded in the above cases, &c., furnish, in his opinion, positive proof, in addition to the above negative argument. He further adds:

> "No other parts except the ganglia of the grand sympathetic nerves have a similar, or so free, a communication between the nerves supplying the muscles usually affected; and in all the examinations after the death, both in the human subject and the animals killed by the extract of nux vomica, I have found an increased vascularity of some of those ganglia."

The following paragraph we quote as a brief and definite statement of our author's views:

> "I do not mean to assert that tetanus is a specific complaint entirely seated in the ganglia of the grand sympathetic nerves, but that the ganglia are the important parts of the nervous system to which the first irritation tends, and from which it proceeds to the rest of the nervous system. The validity of this statement is, I think, most satisfactorily confirmed by the case of Richard Ward.* On dissection the marks of irritation in the ganglia were most decidedly greater on the right side than the left; and during life the tetanic spasms were so violent in the limbs of the right side that the patient had not the least power over them; and though the spasms were very considerable in the limbs of the left side, they were evidently much milder than they were in those of the right; and even after death there was a much greater rigidity of the muscles of the limbs of the right side, than existed in those of the left."

The author remarks upon the dearth of pathological facts in relation to tetanus, and on the consequent empyricism of the several modes of practice employed to check this formidable disease. He does not proffer the facts furnished by himself as sufficiently numerous and important to substantiate a system of practical principles. The inflamed condition of the ganglia, and of the pia mater of the brain and spinal marrow, so characteristic of the disease, in his opinion should suggest the employment to a moderate extent of general and local bleeding. Particular attention should be paid to the digestive organs as they appear to form an important link in the chain of morbid communication. He recommends, therefore, the employment of an emetic, and that this should be followed by mercurial purges. He thinks, however, that the alterative effects of mercury on the system would be equivocal, as they are observed to produce the inflamed state of the ganglia which, in this disease, we should endeavour to obviate. Anodyne medicines, as for instance the pulv. ipecac. comp. in frequent doses, are to follow the above evacuants.

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* See page 51.

The facts which are recorded in the cases and experiments detailed by our author both from their number and their character, whatever fallacy there may be in his deductions, certainly constitute a valuable addition to our stock of data. Although we can not admit the importance which he attaches to them in relation to the particular subject of his essay, yet it is obvious that they may have a pertinent bearing upon pathological questions of a more general character.

The reader will have already perceived that we do not subscribe to our author's peculiar opinions. It will be recollected that the first series of facts adduced are intended to illustrate the influence of local affections upon the organs of the ganglionic system. We must confess that in our opinion this chapter is much more highly honourable to our author's candour, than to his logic, for certainly the circumstances which he brings forward with such an air of confidence, directly militate against his own opinions. Can any thing be more plain than, if local affections uniformly influence the digestive and circulatory organs through the medium of the sympathetic ganglia, that the occurrence of this common phenomenon in those cases in which tetanus supervenes upon the ordinary constitutional symptoms, can explain nothing in relation to the specific character of this disease? If every local impression is communicated to the system in this manner, the fact can be by no means considered as characteristic of tetanus.

But it may be said that our objections do not apply to the inference in relation to the idiopathic form of the disease. But granting that it results from some cause operating first on the mucous membranes of the digestive organs, and thence communicated to the system through the ganglia; what diagnostic inferences can be drawn from such an admission? We very well know that a great variety of diseases, and among them many which bear no resemblance to tetanus, are communicated through the same medium. Indeed it is the opinion of many, that these organs are the inlet through which all morbid influences are communicated. Certainly then we have accomplished but little toward tracing out the peculiar nature and seat of this disease, by establishing the above fact in relation to it. Our inquiries in relation to the specific nature of any disease can not be productive of utility, until they reach so far as to determine something peculiar to the disease in question, either in relation to its seat, or immediate cause, and which may indicate the remedies adapted to the occasion. Every advance towards this desirable result is certainly important, but our author's investigation of this disease certainly does not extend beyond the point at which common observation had long ago arrived.

We very well know that the ganglia of the sympathetic are the media through which the different parts of the nervous system are connected with each other, and through which they keep up a constant correspondence by which the vital actions of different parts of the system are made to correspond and to conspire to a common office in relation to the general functions. It certainly is not surprising, therefore, that in all diseases which, from having been local, become general, the ganglia should exhibit evidences of disease.

Most of the theories which have been formed in relation to the seat and cause of tetanus have been built upon an assumption, viz., that the muscular fibre both in health and disease is altogether passive, and that it derives not only its stimulus to action from the nerves which are sent to it, but that its contractility or susceptibility of contraction is also conferred upon it by the nerves diffused through its substance. Haller was the first who clearly stated the question whether the muscles be of themselves contractile, or are wholly dependant upon the nerves for this property. This great benefactor of our science warmly advocated the position that this power is inherent in the muscular fibre. By him it was designated as the *vis insita musculorum.* The contrary opinion, viz., that it is by virtue of the nerves forming a component part of the muscular fibre that this property is bestowed, was advocated with no less ardour and ingenuity by Whytt. It is obvious that the question is one of a general nature involving many other important circumstances. It is not surprising, therefore, that it has continued till this time to be agitated with more warmth and pertinacity than becomes a scientific discussion. We can not, upon the present occasion, even give an abstract of the arguments arrayed upon either side. It may be sufficient to state that, notwithstanding the ability with which Haller vindicated his opinions, the doctrine of the Neurologists has generally prevailed, and particularly in pathological investigations. Indeed the facts which support the belief that contractility is solely derived from the nerves, however equivocal they may be, are certainly the more obvious and palpable, as for instance, the large proportion of nervous filaments generally distributed to the muscles; the paralysis of a muscle uniformly resulting from the division of its nerve; and the influence of morbific and remedial agents upon the muscular fibre, through the medium of the nerves. In pathological speculations, this position has been unconsciously admitted even by those who have not acknowledged it in physiology; hence those nosologists, who have divided diseases into classes corresponding to the several functions, have not recognised the muscular system as being at all distinct in regard to its diseases, from the nervous. Dr. Good has no class of diseases belonging to the muscular system.

In relation to the above question, however, the opinions of physiologists have within a few years undergone a remarkable revolution. No one has done more to effect this change than Dr. Philip, and particularly in his experimental investigation of Le Gallois' Memorial. If the facts adduced by him and others, who are directing their attention to this subject, do not lead to conviction, they certainly give a preponderance to the opinion that for their contractility or susceptibility of contraction, the muscles are no way dependant immediately upon the nerves. Those, however, whose contraction is under the controul of the will, do ordinarily derive their only *stimulus* to the exercise of this power through the medium of the nerves, although susceptible of impressions from other agents and through other media.

The following reflections which we will offer on this subject may have occurred to others, and may in some form have been given to the public, but if so, we are not aware of it.

If the vital property, essential to contractility and motion, be supposed to reside only in the nervous tissue diffused through the muscles, then is the muscular substance, in relation to contraction, a mere mechanical instrument, as are the tendons and cartilages; for let it be but in any shape admitted that the muscular fibre receives an impression from the nerves, by which it is made to contract otherwise than mechanically, and the position of muscular contractility is obviously at once established, for it must then be the result of some peculiar vital property, which is even more than we demand. Sensible of this, the neurologists have, strenuously endeavoured to account for the phenomenon on mechanical principles. As the tenuity of the nervous tissue is such that it obviously is not adequate to any direct effort upon the muscular fibres sufficient to produce the effect observed, they have, therefore, supposed the employment of certain mechanical principles by which the power may be indefinitely multiplied. The mechanical powers, hydraulic, and pneumatic principles, have been successively resorted to, but as the employment of no one of them rests upon a single fact, but is merely suggested by the necessity of the case, and to complete an hypothesis, later physiologists have rejected them all; chemical principles have also been used with similar success.

Electricity has, however, of late been employed with at least more plausibility, and as we are not yet fully acquainted with the powers of this agent, we can not with equal precision reply to what is but vaguely advanced. Granting, however, that there is a principle of this kind generated in the brain, or put in motion by a certain arrangement of parts, and that this is conveyed through the system to produce the phenomena of life by the nerves, for we are ourselves disposed to believe that this agent is employed in the animal system, yet the arrangement of parts in the muscles, by virtue of which this agent causes them to contract, is no less important than that of the brain by which it is supposed to be put in motion, nor than that of the nerves by which it is supposed to be transmitted. Hence it appears that there must exist in the muscles either some peculiar vital property, which we might call vital attraction, and that this is excited to action by a stimulus conveyed through the nerves; or that there is a peculiar arrangement of parts or constitution of matter, unlike any thing in dead matter, bearing a relation to electricity, by virtue of which that agent produces upon it the phenomena of contraction. Upon either supposition there is something inherent in the muscles which makes them susceptible of contraction, and this property we may with propriety call *contractility.* Were there not some property or peculiarity of structure belonging to muscle, and which establishes this relation between it and the electric agent, then the cellular tissue and the bones should also contract from the same cause.

Restricting contractility, then, to signify merely susceptibility of contraction, consisting in some property or peculiar constitution of the muscular fibre, and it appears to us that its existence can not be denied. If we define it to be this particular property or constitution itself of the fibre, then the term is applied to something of which we have no idea, and like the characters in algebra, is merely the sign of an unknown quantity.

Fact, argument, and authority, then, are in favour of the opinion that the muscles are not dependant upon the nerves for their power of contraction, but only for the stimulus which *ordinarily* excites them to action. This being the case, it follows that the diseases of the muscles may be derived from two sources. 1st. There may exist a morbid condition of the nervous system, by which their stimulus becomes deficient, or excessive and irregular in its transmission. 2d. The morbid aberration may be in the contractile property of the muscle itself, by which it may become more or less sensible to the ordinary stimulus, or may become susceptible of impressions from other causes.

Our author in common, so far as we have known, with all who have treated of this disease, acknowledges no such principle, and yet, if it be employed in pathology at all, there is certainly no disease which will with more propriety admit of it than tetanus. By the author's own statement, it appears that the brain and spinal marrow are no more affected than may be accounted for by the general disturbance of the system, and for that reason he infers that the source of the disease must be in the sympathetic system, which ordinarily influences the voluntary muscles scarcely at all. Indeed, nearly all the remarkable phenomena of this disease appear to be concentrated in the muscular system. Even after death, while scarcely any morbid derangement can be discovered in other organs, the muscles remain rigid and the body inflexible. The little influence which neurotic remedies exert upon this disease is a circumstance favouring our position. Narcotics have perhaps been more employed than any other agents on account of the supposed seat of the disease, but they have generally appeared to have but little influence, and even that may be accounted for by the influence which they may be presumed to have on the muscles through the nerves.

The general and rapid diffusion of the disease throughout the muscular system is a circumstance which may favour the belief that the morbific cause emanates from the nervous centres, but it is to be observed that the nerves, in addition to their office of conveying their peculiar influence from the sensorium, undoubtedly serve as the internuncii between the various parts of the muscular system, by which a correspondence and harmony of action is produced, as is done between the internal organs through the branches of the sympathetic.*

Our author has certainly suggested nothing new in relation to the treatment of this formidable disease. Bleeding has been often employed, in almost every degree, with little advantage. Narcotics also, as mentioned above, have not been neglected. Emetics and cathartics have been resorted to, and we believe, when employed to produce a powerful impression on the digestive organs, they have accomplished more than any other class of remedies. Tonics and diffusible stimuli have been strongly recommended by some and rejected by others. The effects of the warm bath have generally proved in some degree beneficial. The cold bath has also been employed with apparent benefit.

Whatever treatment may eventually be found successful, we are sanguine that it will be one which is employed with a bold hand and which is calculated to make a powerful impression upon the system. The victim of this disease can only be torn by violence from its iron grasp.

From the pathological principles which we have endavoured to substantiate, we would propose, as a general object, to effect, by some energetic means, a concentration of the powers of life in some other set of organs. With this view we would first employ an emetic, and next, particularly as the bowels are usually torpid, some drastic purge, as gamboge, scammony or croton oil. Next we would recommend the use of some remedy which may excite the vascular system with the least possible influence upon the nervous, and which would at the same time solicit the vital forces to some of the internal organs. For this purpose we would use liberally the tinct. lyttæ to effect speedily the urinary organs. The application of the actual cautery along the spine we would also recommend, for although this be not the source of the disease, still it may be influenced through the medium of the nerves. The warm bath should not be neglected, neither would we discard narcotics. N. R. S.

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* We do not deny that the exciting cause may operate through the nerves. We only claim that the proximate cause exists exclusively in the muscles. The division of the nerves would probably not relieve the spasm when it is once excited.

Art. II.—*Addenda to Miner on Spotted Fever.*—August 29th, 1825.

"*Absistamus: nam lux inimica propinquat.*"

Having accompanied the author of the above pamphlet thus far in his career of authorship, and having heretofore found much to commend as well as to condemn, we would fain continue the pleasing exercise of the former duty; or if this zealous writer will so abruptly deviate from us, and even from himself, as that we can find occasion only for censure, we would, if possible, altogether withhold our opinions. But unfortunately it is our province, not only to exhibit in strong relief, the excellencies of an author, but it is also our imperious duty to warn the public against his errors. In the present instance there are other reasons which compel us to remark. Hitherto we have spoken of our author's writings in terms of qualified approbation. We have expressed our opinion in accordance with his general pathological remarks on spotted fever. Of his general indications of treatment we have also approved. We hope that our readers will have already observed, however, that our expressions of this kind have been predicated upon the correctness of our author's personal observation, and on the supposition that the epidemic of which he treats is indeed spotted fever, or a disease characterised by similar symptoms of depression of the vital powers. In the general sketch which our author has heretofore given, and in the assertions made by him of the character of the disease, we could not doubt, without calling in question his veracity, the identity of the disease which he describes with this formidable epidemic. In the Addenda, however, we are, by himself, furnished with data by which we may fairly discuss this important question. It will be recollected, however, that we pointed out certain inconsistencies in his former statement, which even then staggered our confidence in the impartiality of our author's perception of medical facts. Before proceeding further, however, we will permit him to plead his own cause, by quoting the cases which he has himself related in vindication of his principles and practice.

" *Case of Mrs. C—— B——, ætat. twenty-five.*— This patient, from some cause or other, was habitually costive, seldom having a discharge from the bowels oftener than once a week. Previous to her attack in the present instance, nothing had passed the bowels for five days, during which time, she was engaged in attendance upon a sick sister, whose case proved fatal. Most of this time, she sat up during the night. For the last two days, she was unquestionably in a state of predisposition, as she complained of loss of appetite, languor, indisposition for exertion, vertigo, and various other symptoms usually called hysterical, such as quick transition from laughing to crying, without adequate cause, etc.

"*July* 6*th*. 1825. About eight o'clock, A. M. while collecting vegetables in the garden, she was suddenly seized with extreme vertigo, complete blindness and deafness, with great distress and faintness referred to the epigastric region, upon which she immediately fell to the ground, in a state very near to perfect insensibility. On being carried into the house, the surface was observed to be very cold and pale, and there were the strongest marks of distress in the countenance.

The by-standers immediately applied tincture of camphor to the face, and smart friction was made, both with the hand and flannel, to the back and extremities. Under this treatment she soon recovered from her insensibility, but was at the same time seized with a most excruciating pain in the loins, and the lower part of the abdomen. This was so extreme, that she incessantly cried out for opium; and when some of the tincture was obtained, she would not wait for it to be dropped or measured, but insisted upon taking instantly, and unmixed, a quantity, which to the judgment of the attendants, must have been about half a fluid ounce. Her customary physician being absent, and some miles distant with other patients, she waited, without medical aid, about an hour after taking this dose, but as it made no sensible impression, and there was no relief, but indeed rather a gradual augmentation of the pain and distress, she requested that another practitioner should be called in. On his arrival, he directed an enema of nearly four fluid drams of tincture of opium, in a little warm water, together with the application of strong sinapisms to the bowels, and horse-radish leaves dipped in hot water to the extremities. After waiting another hour without any perceptible mitigation of the pain, and the physician who had already visited her being engaged professionally elsewhere, another was now called. This gentleman supposed all the symptoms which had thus far occurred, were the mere result of a sudden *prolapsus uteri*, and under this notion, he very strongly disapproved of the measures that had been taken, and on the score of the opium particularly, he excited considerable agitation and anxiety, both of the patient, and the bystanders. According to his views (as subsequently stated) the introduction of a pessary was to be the most important means of relief. Notwithstanding this opinion, however, he prescribed twelve drops of tincture of opium, every four hours, and twenty of spirit of ammonia every two hours, and departed. In another hour, the customary family physician arrived. At this time, according to the statements of the patient and attendants, there was still very little mitigation of the pain. The pulse was quick, and gaseous, (or in other words, soft and weak, with considerable apparent fullness,) and as infrequent as fifty-five in a minute. The temperature, though declared not to be near so low as it had been, still fell considerably short of the natural standard. The countenance was motley, being principally very pale, but with a few livid patches; the lips were livid; the tongue was much contracted and pointed, and its surface was shrivelled, and somewhat redder than natural. There was no thirst, though the patient lay with the mouth open. The respiration was hurried and laborious, and resembled that of a person who had just been making violent bodily exertion. Another enema, of half a fluid ounce of tincture of opium in a little warm water, was immediately administered, and three grains of opium, in conjunction with half a fluid ounce of spirit, and the same quantity of hot water, were taken into the stomach. As the external applications had produced no apparent effect, the mustard was removed from the abdomen, and a plaster of the cerate of lytta (of the P. U. S. A.) of at least forty-eight inches surface, was applied in its stead, and horse-radish leaves dipped in hot water, were renewedly applied to the whole extremities. Two grains of opium in pill were directed to be taken every two hours subsequently, and a hot mixture of one part spirit and two parts water, was advised *ad libitum*. About three o'clock, P. M. the patient had become much easier, but still was not entirely free from pain. The frequency of the pulse was a little increased, but still it was preternaturally slow, being about sixty in a minute; the temperature was restored to near the natural standard, and the whole surface was thickly sprinkled over with dark-coloured petecchiæ; the respiration was less laborious, but was still unnatural. There was no change in the tongue, but the patient had once vomited a small quantity of a transparent liquid, of a light grass-green colour. A slight degree of talkative delirium had taken place, and on inquiry, a considerable sense of faintness and distress was complained of, at the stomach. An epispastic was now applied to the forehead, and another large one between the shoulders; and in addition to what the patient was already taking internally, a mixture of ten minims of the liquor of the arsenite of potassa, and forty of the tincture of opium, was directed at every intermediate hour between the pills. The horse-radish leaves were again renewed to the extremities. The epispastic upon the abdomen had not yet produced any perceptible effect. During the evening, rubefacient effects began to be produced, by all the external applications; but with the exception of a considerable itching of the surface, there was no appreciable change of symptoms. The medication heretofore specified, was directed to be continued through the night.

" *July 7th.* This morning the patient was found free from pain, and perfectly rational. The pulse remained stationary, the surface was of a natural temperature, the petecchiæ of a florid colour, the tongue was dilated and flabby, with the upper surface covered with a loose, slimy, dirty fur, and the edges and under surface livid; there was no thirst, and no irritability of the stomach, but still a great sense of distress and sinking was complained of in the epigastric region, which was uniformly aggravated by the slightest motion of the head.

" At this time, both sides of the head were shaved, and large epispastics were applied, and likewise another epispastic over the stomach. The same internal medication, that was directed the night previous, was continued, with the variation only of assigning a regular period for the administration of the spirit, of which a table-spoonful of a mixture one part spirit, and two parts of bread-water, was directed to be given every intermediate fifteen minutes, between the doses of the other medicines. During this day, and the succeeding night, the symptoms were kept pretty well at bay by this course, except that the patient vomited twice toward morning.

" *July* 8*th*. The patient tolerably comfortable. An epispastic was applied to each wrist. Both the day and the night passed in a pretty uniform state.

" *July* 9*th*. This morning, the symptoms still pretty much at a stand. The patient and her friends were now solicitous to have a discharge from the bowels, and though the abdomen was perfectly soft, and equally free, both from distension and uneasiness, yet the physician yielded to their solicitations, and permitted a laxative enema of decoction of tansey with common salt and molasses, to be employed. In about an hour this came away, but with only a slight discharge of fœcal matter. Epispastics were at this time applied to the ancles, but in other respects, the same medication as heretofore was continued.

" *July* 10*th*. This day the symptoms continued stationary, till the latter part of the night; and consequently, the medication was unchanged.

" *July* 11*th*. The fifth day of the disease. This morning the pulse was found much more frequent, being a little upwards of a hundred in a minute. The skin was again considerably cooler, and the fur of the tongue was loose. There was distressing singultus, and rejection of every liquid taken into the stomach.

" At this time, as this change was considered as a critical effort, all medicine was discontinued, except a pill consisting of two grains of opium, every two hours. Common tea, and simple chicken broth, very hot, were allowed often, in teaspoonful doses, and the patient was enjoined to refrain as far as possible from all talking, and all motion, particularly of the head, as moving this part had hitherto invariably occasioned faintness, sickness, and sinking at the stomach. Under this course, a considerable improvement of all the symptoms was found at seven o'clock, P. M. the pulse was less frequent and more full, the skin was warmer, the tongue was clear from fur, though quite red, the singultus and vomiting were gone, and the patient had had some quiet and refreshing sleep. The night passed tolerably well under the same course.

" *July* 12*th.* To all appearance, the patient was now pretty free from disease. The interval between the pills was protracted to three hours; and two fluid drams of the compound tincture of cinchona, were directed every two hours. Improvement continued through the day and night. Toward morning, there was some manifestation of returning appetite, and food sat well. Milk-porridge was allowed, with crackers soaked in tea, coffee, or brandy and water, and likewise a little cod-fish, soaked soft and picked fine.

" *July* 13*th.* Symptoms nearly stationary. A laxative enema, prepared as the previous one had been, was now employed. This soon operated twice pretty freely, and occasioned considerable faintness, and increased weakness. On this account, an extra pill of two grains of opium was given. The regular pills and tincture were continued as the day before. This day and night, on the whole, passed tolerably well.

" *July* 14*th.* The interval between the pills, was this day lengthened to four hours. The tincture was continued as usual. The patient was now able to take sufficient food, and to sit up in bed. Passed the whole twenty-four hours well.

" *July* 15*th.* Still improving. Took only four of the pills this day.

" *July* 16*th.* The patient now able to walk about her room. Discontinued both the opium and the compound tincture of cinchona, and in their place substituted a tea-spoonful of an aromatic tincture of gentian, in a glass of wine, every four hours. During convalescence, a great number of minute carbuncles made their appearance, which did not disappear entirely, under about a fortnight.*

" *Case of Miss L——— S———, ætat. sixteen.*—This patient was in a state of predisposition, for about a week, during which time she complained of languor, indisposition for exertion, headache, pain of the limbs, nausea, occasional vomiting, and diarrhœa. For the last twenty-four hours of this period, both the body and the limbs were thickly covered with distinct, but dark-purple petecchiæ. In the course of this time, the patient, of her own accord, had taken one cathartic of aloes with canella, which operated but moderately; and the day previous to the attack of her disease, another of sulphate of soda, which operated freely.

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* This patient had an attack of the same disease, in March, 1825, equally severe, which yielded to similar treatment.

"*July 8th,* 1825. About one o'clock, P. M. after drinking freely of lemon-punch, which contained only a very small quantity of spirit, she was suddenly seized with great distress, and sense of faintness and sinking in the epigastrium, followed immediately by the most extreme pain in the lower part of the abdomen, much resembling that of parturition, but far more severe. Upon the occurrence of these symptoms, the whole body and limbs quickly became cold, and insensible to the most powerful irritants and rubefacients, the countenance pale, sunken, and ghastly, the lips livid, the tongue contracted and pointed, but without fur, the respiration interrupted, and resembling that of a person just beginning to recover from asphyxia. There was likewise violent delirium, and complete inability to swallow, but notwithstanding this general condition, the pulse was perfectly natural in all respects.

"On account of the inability to swallow, no internal remedy could be employed. An enema, consisting of half a fluid ounce of tincture of opium, diluted with a little hot brandy and water, was immediately administered; frictions were thoroughly and perseveringly employed; and after their discontinuance, the whole body and extremities were covered with horse-radish leaves, previously dipped in hot water.

"In the course of two or three hours, there was an obvious mitigation of all the symptoms, though no individual of them had disappeared. Deglutition, though difficult, was now no longer impossible, but yet the muscles concerned in this process, seemed to be partially paralytic, and when any effort was made to swallow, they acted irregularly and convulsively.

"Strong epispastics were now applied to the forehead, between the shoulders, and to the epigastric region; and the rubefacients to several parts of the body, were renewed. Forty minims of tincture of opium, and ten of the liquor of the arsenite of potassa, were directed every two hours, and at every intermediate hour, two fluid drams of officinal alcohol, in some hot liquid. In addition, ginger mixed with hot spirit and water, and tincture of camphor diluted with hot water, were administered in considerable quantities, as they could be got down.

"Through the remainder of the day, there was a moderate, but gradual and regular alleviation of symptoms, till about ten o'clock, P. M. when a very irritable state of the stomach suddenly took place, accompanied with extreme epigastric sinking and distress, greatly hurried and panting respiration, very weak, soft, and small pulse, as frequent as a hundred and forty beats in a minute, together with a cool, moist, and flabby skin.

"The tincture of camphor, the officinal alcohol, and the spirit, were now omitted, and two grains of opium in pill, were given at every intermediate hour, between the regular doses of tincture of opium and liquor of the arsenite of potassa. Epispastics were applied in addition, to the ancles. Under this course, all vomiting soon ceased; there was quiet and refreshing sleep, consisting of short naps, from which the patient was easily roused, and the night passed comfortably.

"*July* 9*th*. This morning, there was a considerable mitigation of all the symptoms; the temperature was nearly as high as natural, the countenance was brighter, the epigastric distress and sinking were gone, the mind was tolerably steady, the pulse slower and fuller, the tongue covered with a light brown fur in the middle, and red at the edges, and the petecchiæ were beginning to disappear, (as often happens under such a course of treatment,) but there was such torpor of the bladder, as to occasion a total inability to void urine.

"For the last mentioned symptom, strong epispastics were applied to the inside of the thighs; but in other respects, the same medication that was employed the night before, was continued. The day passed comfortably, and with some further mitigation of all the symptoms; but as the torpor of the bladder still continued, an enema of decoction of tansey and ginger, to which was added common salt, was administered in the evening. This came away during the night, but without any fœcal discharge of any consequence from the bowels, though with a free evacuation of urine.

"*July* 10*th*. This morning there was no material change in the symptoms. The patient, however, was full as well as the day before. The sleep had been quiet and refreshing, and the patient was easily roused by the slightest means. One or two additional epispastics were now applied, but no change was made in the internal remedies. As during this day and night, the symptoms continued at bay, no change was made in the medication, except the addition of two small epispastics to the arms.

"*July* 11*th*. This day and night, no change of any consequence in the symptoms, and of course the same medication continued.

"*July* 12*th*. Till the evening of this day, there was no material change either in the symptoms of the case, or the medication. During the evening, it being the early part of the fifth day of the disease, great irritability of the stomach suddenly took place, and all liquid medicines were rejected. The surface immediately became considerably cooler, the pulse as frequent as a hundred and twenty in a minute, the respiration hurried, and a profuse sweat took place. At this time, two grains of opium in pill, were directed every hour, and every thing else was interdicted, till the stomach should become composed, which happened in the course of the night. After this, the pill was given only every two hours, and at the intermediate hour, a small quantity of spirit and water was allowed, and a little common tea made very strong.

"*July* 13*th*. This morning, the patient was much better, the skin was nearly of the natural temperature and softness, the pulse was less frequent, the stomach perfectly settled, and the tongue fast losing its fur. At this time, the interval between the pills was lengthened to three hours, and half way between, two fluid drams of compound tincture of cinchona, were directed. During this day and night, there was considerable improvement.

"*July* 14*th*. The patient still improving. The pills were now given only every four hours, and the compound tincture of cinchona, half way between. Food was taken with considerable relish, and in considerable quantity.

"*July* 15*th*. This day took only four pills, and then discontinued them entirely. No further medication, except a little of the tincture necessary. Convalescence was subsequently rapid.

"*Case of Mr. R——— F———, ætat. twenty-three.*—This patient for several days previous to the attack of his disease, had complained of languor and weakness, and had been pretty much destitute of appetite. During this period of predisposition, he took two cathartics, one of which was sulphate of soda. This operated freely, only the day before he was seized. The night immediately previous to his attack, he spent in watching with a patient, sick of the prevailing epidemic.

"*July* 10*th*, 1825. While walking in the street, between twelve and one o'clock, P. M. he suddenly observed to a companion, that he felt as if intoxicated, and almost instantly fell to the ground. He was immediately carried into a house, and medical aid was called. On the arrival of the physicians, which was about one o'clock, P. M. the patient was still in a state of entire insensibility; and his condition, to the eye of a bystander, resembled a person labouring under a serious apoplexy; or more exactly, one recovering from a state of asphyxia from drowning. The surface was pale and cold, and covered with a clammy sweat; the eyes were fixed; respiration was slow and interrupted, and seemed as if carried on entirely by mere voluntary exertion; pulsation at the wrist was barely perceptible, and there was total inability to swallow.

"After wiping, and thoroughly rubbing the skin, epispastics were immediately applied to the forehead, sides of the head, and between the shoulders; and nearly the whole of the body and extremities, were covered with sinapisms. As no tincture of opium was at hand, an enema, consisting of a fluid ounce of oil of turpentine, mixed with the same quantity of oil of olives, was immediately administered.

"In about two hours, the skin was raised nearly to its natural temperature and softness, and the pulse acquired so much force, that its beats were easily ascertained to be about fifty in a minute. There was now no stupor, but considerable delirium had taken place. The eyes had a fixed and vacant stare, but when the patient was spoken to, he immediately raised himself with a frightful expression of countenance, somewhat resembling that of a rabid person. There was, at the same time, considerable deafness.

"A mixture of thirty minims of tincture of opium, thirty of strong tincture of lytta, and three of the liquor of the arsenite of potassa, was now directed to be given every two hours, and at the intermediate hours, a pill consisting of a grain and a-half of opium, with two grains of calomel. Spirit and water were prescribed for drink. During most of the remainder of the day, and the subsequent night, there was violent delirium, but,

"*July* 11*th*, at eight o'clock, A. M. the patient was found free from this symptom, though in its stead, there was a great sense of distress and sinking in the epigastrium. The pulse was now very soft, weak, and frequent; the skin cool, and both the body and extremities covered with petecchiæ, of rather a florid colour. The countenance was at the same time pale and sunken, the tongue was pale, and of a bloodless appearance, and coated with a thick but slimy and dirty fur.

"At this time, an epispastic was applied to each wrist, an occasional use of camphor, and a free use of spirit was directed, and the opium, both in substance and tincture, with the liquor of the arsenite of potassa, as heretofore specified, was continued. The tincture of lytta, and the calomel, were, however, abstracted, the former on account of a copious and exhausting diuresis, which it had evidently produced; and the latter, because it was now deemed injudicious, and believed never to have been indicated. Neither of these articles appears to have been proper in this case. At eight o'clock, P. M. the patient was again delirious, and much inclined to coma, but the epigastric sinking and distress, seemed to be somewhat less. The pulse was very weak and soft, and the tongue as last specified.

"The spirit, and the opium in substance, were continued as heretofore, but the dose of the tincture of opium was increased to forty minims, and that of the liquor of the arsenite of potassa, to ten minims; and an epispastic was applied to each ancle.

"*July* 12*th*. This morning, no material change perceived in the symptoms. Additional, but small epispastics, were applied to the legs and arms, but in other respects, the same medication was continued. In the course of the day, considerable strangury took place.

"*July* 13*th*. This morning, the symptoms still stationary. New epispastics were applied to the inside of the thighs and arms, but the same medication, in other respects, was continued. At evening, there was pain in the bowels, which was soon followed by an urgent diarrhœa, ten or twelve discharges happening in the course of the night, though four extra pills of opium, of two grains each, and three enemata of four grains of opium in powder, were given during this time. This quantity of opium kept the patient from sinking under these profuse evacuations. Judging from the effects of calomel in other cases, it is believed that the diarrhœa was to be ascribed to that article, which, it will be recollected, was used at the commencement of this case. Through this night, the patient was generally wakeful, but when he did sleep, he sweat profusely; in consequence of which, the skin became considerably cooler than it was before, though the tongue became clean, and the delirium disappeared.

"*July* 14*th*. This morning, the patient was found in an extremely languid and weak state, but at the same time free from most of the uneasiness, which had hitherto attended his disease. The diarrhœa had abated, but was not entirely gone. The same internal medicines were directed that had been regularly employed the day previous, and an enema of four grains of opium in powder, was directed after every discharge from the bowels that might take place. Two only were needed before evening. During this day, the skin became nearly of the natural warmth, the tongue became clean, but was very red; and the pulse was about eighty, in a minute. The night was passed comfortably, under the same course. No opiate enema was needed.

"*July* 15*th.* This morning there was considerable improvement in the general condition of the patient, and he was considered so free from disease, that the tincture of opium, and the liquor of the arsenite of potassa, were omitted, and half a fluid ounce of the compound tincture of cinchona, was directed in their stead. The same medication in other respects was continued, and the day and night passed well.

"*July* 16*th.* The patient still improving. The intervals between the doses of opium, were now protracted to three hours, and the same was done with respect to the doses of the compound tincture of cinchona.

"*July* 17*th.* Still improving. The same medicines continued, but at intervals of four hours.

"*July* 18*th.* Still better. The same medication, but at intervals of six hours.

"*July* 19*th.* Still better. All the medicines hitherto employed, were now abstracted, and the patient was put upon a mixture of one dram of cinchona in powder, with a glass of wine, four times a-day. The petecchiæ are not yet entirely gone, though they are now fast disappearing. The patient now has a good appetite, walks out, and is rapidly recovering his wonted strength. Discharged."

"*Case of Miss A—— C——, ætat. thirty.*—This patient had for a long time laboured under Ayer's Dyspeptic or Hepatic Marasmus; and for several days previous to the attack of her disease, had been more or less in attendance, both night and day, upon sick friends, beside labouring unusually hard the day immediately preceding, in washing. On that day, she took (without advice) a common cathartic dose of the tincture of aloes and myrrh, but it produced no operation upon the bowels.

"*July* 15*th*, 1825. In the morning, she was suddenly attacked with pain in the *heel*, which by paroxysms, was extremely violent. During the remission of this pain, she had hysterical delirium, with incessant loquacity, and alternate laughing and crying, without adequate cause. There was no medication at all till five o'clock, P. M. when her physician arrived. At this time, her cheeks were of a deep livid colour, while the rest of her face was preternaturally pale; the skin was preternaturally cool, and rather dry; the tongue was covered with a slight thin fur, and was contracted and pointed; the respiration was like that of a person who had been making violent bodily exertion; the pulse was weak and soft, and about fifty beats in a minute. Strong epispastics were immediately applied to the forehead, between the shoulders, and on each wrist, horse-radish leaves dipped in hot water, were applied to the feet and legs, and forty minims of tincture of opium, five of the liquor of the arsenite of potassa, and five of strong spirit of pepper-mint, were given every two hours. Hot spirit and water, and hot tincture of camphor and water, were given *ad libitum*. In this way, about half a pint of spirit was taken in the course of twenty-four hours. Under this medication, the patient became much more comfortable, and continued so for the remainder of the day and night. The sleep was moderate and easy, the temperature of the skin rose nearly to its natural warmth; the pulse, though still weak, was as frequent as seventy-five in a minute; all pain was gone, the delirium was much less, the tongue remained as the day before, but there was so great torpor of the bladder, that the patient was entirely unable to void urine by voluntary effort.

"*July* 16*th*. This morning, the symptoms were found much as they had been during the evening and night. Epispastics were applied to the inside of the thighs, for the relief of the torpor of the bladder; but in other respects, the same medication was continued. During the day, the symptoms continued pretty much at bay, and before evening, the torpor of the bladder was relieved. During the night, there was considerable restlessness, and more delirium.

"*July* 17*th*. This morning, the tongue was dark red, much dilated and flabby, and destitute of fur, the skin was considerably cooler, there was a profuse and exhausting sweat, the pulse was soft and weak, and about a hundred and twenty in a minute. Epispastics were now applied to each ancle, and two fluid drams of officinal alcohol, diluted with a little hot water, were directed to be taken every hour, in addition to the previous course. Through the day, the symptoms remained nearly stationary. In the evening, there was considerable epigastric sinking. At this time, an extra dose of two grains of opium in pill, was administered. During the night, there was but little epigastric sinking. The other symptoms remained stationary.

"*July* 18*th.* This morning, no new symptoms, and the previous ones were much at bay. The same medication was continued. Till twelve o'clock, M. the patient remained comfortable, and without change of symptoms. At this time, there was a severe paroxysm of epigastric sinking, but without any material change in the condition of the pulse, tongue, or skin. A large epispastic was now applied to the epigastrium, and an enema of three fluid drams of tincture of opium mixed with a little hot water, was administered. The same medication, in other respects, was continued. The afternoon passed more comfortably. About nine o'clock, P. M. there was an increase of the delirium, with incessant loquacity, which lasted about an hour and a-half. Between ten and eleven o'clock, P. M. she suddenly sunk into a deep coma, which was mistaken by the attendants for fainting. At this time, the skin was cold, and drenched with sweat, the lips were purple, the respiration was interrupted, and resembled that which is entirely voluntary; there was effusion into the bronchiæ, throbbing or palpitation of the carotids, and other large arteries, but the pulse, though seemingly full on a superficial examination, was extremely weak and soft. An immediate application of mustard was made to the thorax, frictions were vigorously employed, and horse-radish leaves dipped in hot water, were applied to the extremities, but all with little or no effect. Life continued till about one o'clock, A. M. Just before death, there were two or three slight convulsions, which lasted a few seconds only."*

"*Case of Mark Mortimer Leavenworth, ætat. twenty-five.*—This patient was naturally a person of slender constitution and rather feeble health. Having an early taste for literature and science, he was originally designed for an academical education, which, however, he was prevented from obtaining by a disease of the eyes, a semi-paralysis of the optic nerve, which was brought on by close application to study. He had been engaged for about three years in the study of medicine, and was only waiting for the expiration of the legal time, in order to be admitted to the degree of M. D. Immediately previous to the time of his sickness he was the pupil of Samuel B. Woodward, M. D. of Wethersfield, Connecticut, in whose practice he had witnessed several cases of the disease with which he was soon to be seized.

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* In each of the preceding cases, much injury was invariably produced by moving or raising the head, while the patient was in the lowest state. Epigastric sinking was the certain consequence. In general, the head was not shaved and blistered sufficiently early. As this process is attended with trouble, it is usually deferred so long as not to produce its full effect. In the worst cases, all the most efficient means should be employed, with the least possible delay.

"On the eighth of July, he made a visit to Middletown, Connecticut, and was invited to remain a short time, as an assistant to one of the physicians of that place, who had more cases of the epidemic under his care, than he could well do justice to alone.

"*Tuesday*, *July* 12*th*, 1825. After about three days attendance upon the sick in this place, he complained about nine o'clock, A. M. of pain in the bowels, which was soon followed by a free liquid discharge, that produced great languor and sense of weakness. Two fluid drams of camphorated tincture of opium, obviated these symptoms, and prevented any further evacuations from the alvine canal. About twelve o'clock M. while visiting a patient, he was suddenly seized with great vertigo, accompanied with faintness or sinking at the stomach, which were speedily relieved by three or four fluid drams of compound tincture of chinchona. Upon this, he immediately rode home, and soon after ate with much relish, a full dinner. The vertigo, and faintness or sinking at the stomach, occurred at intervals through the afternoon, and confined him to the house, but not to his bed. The paroxysms, however, were readily relieved by a little brandy and water. During the whole of this time, the pulse, tongue, countenance, and skin, exhibited no appreciable deviation from their customary healthy state. Towards evening he walked out a few rods, but was seized with faintness, which caused him to return and take to his bed, from which it is believed, he never arose without assistance. In the evening he took a cup of tea, a little brandy and water, and a single grain of opium, which greatly relieved the vertigo, and epigastric faintness or sinking, the only symptoms of which, at this time, he complained. During the night, he took moderately of brandy and water, or of compound tincture of cinchona, as often as these symptoms occurred, and invariably, with material relief. There was but little sleep, and that much interrupted.

"*Wednesday*, *July* 13*th*. In the course of this morning, there was double vision, the vertigo and epigastric faintness or sinking became much worse, and there was total inability to raise, or even move the head, without great aggravation of these symptoms. The pulse was still natural, as respects frequency and force, but had become quick; the skin was also natural, both as respects temperature and moisture; but the tongue had become flabby and pale, and was covered with a thin, light coloured fur; and the respiration was like that of a person who had just been making considerable bodily exertion.

" It was now judged necessary to enter upon a regular course of medication, and the patient was accordingly put upon one grain of opium every two hours, with three fluid drams of compound tincture of cinchona, and about the same quantity of brandy suitably diluted, every hour. A little wine was occasionally taken at the pleasure of the patient.

" During this day, the symptoms were much less perfectly controlled, than they had been the night previous. Towards evening, and through the night, there was considerable disposition to vomit, with occasional retching, for which about four extra pills of opium, each consisting of two grains, were taken at irregular intervals, and uniformly with great relief. During the night there was but little sleep, and that imperfect and unrefreshing.

" *Thursday, July* 14*th.* Double vision, vertigo, and epigastric faintness still continue, but with some abatement, especially of the last. The pulse, skin, and tongue, are much as the day before, but the respiration is nearly natural. During the regular morning aggravation of symptoms, epispastics were applied to the forehead, and the sides of the head. The same quantities of opium and alcohol, that were used the day before, were continued. In the afternoon, without any appreciable change in the external symptoms, the patient felt more comfortable, but on account of a slight uneasiness in the bowels, a casual medical visitor advised a laxative enema. Instead of this, one of a dram or two of laudanum was given, which instantly relieved. Although there was neither fulness nor hardness of the abdomen, even in the slightest degree, but on the contrary, a perfectly soft, and rather lank state, yet some hours afterwards, this advice, at the wish of the patient, was complied with, and a decoction of tansey and ginger, to which was added a little common salt and lard, was administered. About this time, from the suggestion of a counsellor of much experience, and good judgment in such cases, an aromatic infusion of gentian, was substituted for water, for the purpose of diluting the compound tincture of cinchona, and instead of the brandy and water, a table-spoonful of a mixture of equal parts, brandy, lime-water, and boiled milk, was employed. As after some hours, the same uneasiness in the bowels returning, and no evacuation having taken place, another enema, prepared in the same manner as the first, but with the substitution of a fluid once of castor oil for the lard, was administered. About half an hour from this time, there were two moderate evacuations, which were immediately followed by a considerable increase of vertigo, and epigastric faintness, troublesome palpitation of the heart, aorta-descendens, and carotids, great restlessness, and slight delirium, together with a difficulty of retaining any thing upon the stomach. On the occurrence of these symptoms, an enema of two fluid drams of tincture of opium diluted with a little tepid water, was immediately administered, an epispastic was applied to the region of the stomach, and the regular dose of opium was increased from one grain, to a grain and a-half. On account of the irritability of the stomach, it was necessary to omit the compound tincture of cinchona, and the aromatic bitter infusion, and to get down the mixture of brandy, lime-water, and boiled milk, as the stomach would receive it, but without any regularity. During the night, several extra pills of opium, of two grains each, were given at irregular intervals, as the urgency of symptoms required. Under this course, there was considerable abatement of the immediate urgency of the symptoms, and upon the whole the patient slept considerably more than for any night previous, though the naps were short, and the patient was easily roused.

" *Friday, July* 15*th.* This morning the patient was better than the evening preceding, but not so well as the morning previous. The vertigo was still considerable, and there was total inability to move the head, without great augmentation of it. There were, however, only occasional paroxysms of epigastric faintness, and these very moderate. Troublesome palpitation of the heart, aorta-descendens, and carotids, occurred occasionally, always accompanied with considerable restlessness. The skin was cool, and very sweaty, and the pulse was soft and feeble, and as respects frequency, it fluctuated between eighty and one hundred and ten.

" A grain and a-half of opium was now given, every two hours; and every fifteen minutes, a table-spoonful of the mixture of brandy, lime-water, and boiled-milk. Nourishment hitherto, though taken with considerable freedom, had been given rather irregularly. Chicken broth had been tried, but milk-porridge was preferred. A table-spoonful of the latter was now directed to be invariably taken after each dose of the brandy mixture, and frequently a table-spoonful of coffee, was allowed in addition. During this day, in consequence of special exacerbations of the vertigo, palpitation, and restlessness, three enemata, each consisting of two fluid drams of tincture of opium, and two extra pills of opium of two grains each, were necessarily administered, each of which produced the most obvious relief of the symptoms for which they were employed, for the space of two hours. This day there was so great torpor of the bladder, as to prevent a voluntary discharge of urine, but when the catheter was employed, this excretion was found to be natural, both in appearance and quantity. As extra doses of opium were so often necessary, in order to meet urgent symptoms, it was this evening judged expedient to increase the regular dose (which was given every two hours,) to two grains; and on account of a disrelish for the taste of brandy, old spirit was substituted, and a mixture was made, of two parts spirit, one part lime-water, and one part boiled-milk, which was likewise given in doses of a table-spoonful, and followed by the same quantity of milk-porridge, and occasionally the same of coffee. The night passed much more comfortably than any previous one, since the commencement of the disease. The sleep during the whole twenty-four hours, was less than natural, but more quiet and refreshing than it had ever been before. It was still necessary, however, to keep the head low, and motionless. During the day and night of the fifteenth, the patient vomited but twice.

" *Saturday, July* 16*th.* This morning, the symptoms were more at bay, and the patient more comfortable, than any morning since the attack. During the customary apyrexial aggravation of the forenoon, beside restlessness and palpitation, there was some delirium. An enema of two fluid drams of tincture of opium, was immediately administered, the whole top of the head was shaved, and a strong epispastic was applied. The enema not proving sufficient, two extra pills of opium, of two grains each, were given, before the restlessness and palpitation were obviated. When the epispastic began to produce its effect upon the surface, the delirium speedily disappeared. In the afternoon, there was a very obvious mitigation of all the symptoms, and the patient was still more comfortable, than in the morning. For the first time since the attack, the patient was now carefully lifted to another bed. This produced a considerable aggravation of the vertigo, and a recurrence of the epigastric distress and palpitation, for which there was given with speedy relief, an extra pill of two grains of opium, and an enema of two fluid drams of the tincture.

"*Sunday, July 17th.* This morning, the symptoms in general were alleviated still further, than on the morning previous, though there was still inability to move the head without troublesome vertigo. The regular forenoon deterioration required this day, for its relief, two extra pills of opium, of two grains each. At this time, it was judged expedient to enter upon the use of the liquor of the arsenite of potassa, as a supportive aud invigorating agent, and accordingly two minims were given with every regular dose of opium. Otherwise the course, both as respects medicine and nourishment, which had been pursued for the two days previous, was continued. The night passed as comfortably as any one since the attack, if not more so.

"*Monday, July 18th.* This morning, as for three mornings preceding, there was a mitigation of the symptoms, in comparison with most of the day previous. The forenoon aggravation, however, required two extra pills of opium, of two grains each. During the day, some uneasiness in the bowels was complained of. On examination, the abdomen was found to be still free from hardness, fullness or tenderness, but on the contrary, it was actually soft and lank. An enema of two fluid drams of opium, entirely obviated all complaint. This day passed comfortably, as there was less vertigo, palpitation, and restlessness, than usual. Toward evening, the patient was again removed to another bed, which, as usual, occasioned a recurrence of troublesome symptoms, viz. vertigo, palpitation and restlessness, and rendered another enema of two fluid drams of tincture of opium, and an extra pill of two grains, necessary, before the patient could be rendered as comfortable as before. In the course of the afternoon vomiting happened once, and that not long after a dose of the liquor of the arsenite of potassa. As the patient confidently ascribed this effect to that medicine, though probably without reason, it was judged expedient to discontinue it. The night passed comfortably, and without any extra doses of medicine. The regular course was continued unchanged.

"*Tuesday, July 19th.* This morning the patient was much as on the preceding. For the purpose of anticipating and preventing the usual forenoon aggravation, an enema of two fluid drams of tincture of opium, was given early, and with the desired effect. No extra pills were found necessary. About noon, the patient was visited for the first time during his sickness by his father, who lived at a distance. The agitation produced by this meeting, rendered another enema of two fluid drams of tincture of opium necessary, in order to allay the increased vertigo, palpitation and restlessness. The regular medication was continued unchanged. This night, for the first time, was bad attendance. The watcher slept, and of course was irregular, and repeatedly neglectful, in administering both food and medicine, and finally left the house where the patient was, before either the nurse or the family were up.

"*Wednesday, July* 20*th.* The patient was worse this morning, than on any morning since the fifteenth. From that time to the present, the pulse had varied in frequency, from eighty to a hundred and twenty in a minute, and had been soft and weak. The skin had been somewhat cooler than natural, and rather more sweaty than desirable. The quantity of sleep for the twenty-four hours together, on the whole, had been less than in health, but it consisted of short, quiet, and apparently refreshing naps, from which the patient was easily roused. If suffered, however, to continue more than about ten minutes, they became laborious, and seemed to produce fatigue and exhaustion. During this period, the tongue had gradually assumed a thin, but close, sordid, and brown fur, which, however, was uniformly moist. No special thirst had been complained of. The aggravation of symptoms at the present time, consisted in increased vertigo, palpitation, and restlessness; in reduced temperature of the skin; and in an increase of the frequency of the pulse, to about a hundred and thirty in a minute. An extra pill of three grains of opium, and an enema of three fluid drams of the tincture, were given in the course of the forenoon, with the effect of restoring the patient, very nearly, if not entirely, to the situation in which he was, the day previous. During the day, it was judged expedient to take some measures towards moving the bowels, not because there were any further indications for this step from the condition of the bowels themselves, but merely from the length of time they had remained unmoved. In reference to this point, simple water was substituted for the lime-water in the spirit mixture, and about a scruple of the carbonate of magnesia was given at a dose, three times, at nearly equal intervals, during the day. As, however, the patient complained in each instance, after taking it, of considerable uneasiness in the stomach, and as there was an increase of the vertigo, languor, and restlessness, during the afternoon, contrary to the usual course of the disease, and as the tongue was gradually becoming more flabby, and as the edges from which the fur was now beginning to be removed, were more pale than at any time previous, it was on the whole judged expedient, to relinquish the carbonate of magnesia, before it should produce any evacuation, and to add ten minims of strong spirit of pepper-mint, to each dose of the spirit mixture, and likewise to administer an enema of two fluid drams of tincture of opium. The latter part of the day, the patient was as comfortable as usual, till just at evening another aggravation of symptoms was produced, by changing the shirt. This rendered another extra pill, of two grains of opium, necessary, and another enema of two fluid drams of the tincture. About eleven o'clock, P. M. the patient was consigned to the care of the attendant for the night, in as favourable a condition as had been usual, at that time, for several days. About one o'clock A. M. a physician, who slept in an adjoining chamber, was called, on account of a slight discharge of blood from the urethra, in consequence of the introduction of the catheter, which had still continued to be necessary, though it had always been performed by the patient himself. This symptom being explained to the satisfaction of the attendant, the general condition of the patient was examined. Unexpectedly, the pulse was now found to be very small, weak, and soft, and as frequent as a hundred and sixty in a minute, the beat being peculiarly short and quick. The temperature was soon considerably reduced, the countenance became sunken, there was increased vertigo, and a confusion of mind, almost amounting to delirium. An extra pill of opium, of two grains, was immediately given; and the regular dose was increased to three grains. The spirit and nourishment, were continued as heretofore.

" *Thursday, July 21st.* This morning, the patient was in a very low state; but in comparison with the latter part of the night, somewhat improved. Two grains of opium were now given every two hours; and at every intermediate hour, forty minims of the tincture, in conjunction with five minims of spirit of cinnamon. Two additional epispastics, were applied to the sides of the head. Through the day, the symptoms remained nearly stationary. At evening, the patient in a very low state. During the night, he vomited several times; after which, for a few moments, there would be a furious delirium. During the whole time, there was great restlessness and jactitation. Toward morning, there was a kind of epileptic tremor; after which, about sunrise,

" *Friday, 22d July,* dissolution took place."

The above cases are, in the author's pamphlet, preceded by a few miscellaneous remarks, which we have not thought it necessary to quote entire. The following, however, attracted our attention. "Among children more especially, a spurious reaction of only a few hours, with stinging heat, has occasionally appeared, but generally the coldness and languor soon returned."

"Several *torpid* insidious cases have been broken up by *acrid* emetics." "Several of the insidious cases of the present year have been usually protracted, and have assumed somewhat the appearance of chronic complaints, the paroxysms of *sinking* occurring in a severe degree only once in seven days, though there was generally a moderate and obvious *subsidentia* every morning, or rather every forenoon." "In no disease is it so necessary to meet every symptom instantly; and the paroxysms of sinking, when periodical, should *always* be anticipated by such means as will tend to prevent them." "More than half the cases are so mild as to require but very slight medication, provided all injurious measures are avoided."

"Petecchiæ, eruptions, ecchymoses, general effusion of the capillaries, coma, delirium, palpitation, interrupted respiration, numbness, and insusceptibility to the action of ordinary rubefacients, and epispastics and sinking after evacuations, are much more common than in any other febrile disease. By attending to these symptoms, it may be more easily distinguished than any other continued fever." "There is always some prominent symptom by which it may be determined, when the general effection of the system is typhus syncopalis."

It will be recollected by our readers that in his pamphlet on syncopalis, our author reported between three and four hundred cases of this epidemic, as having occurred in one season, in the city of Middletown, containing about four thousand inhabitants, and in the country adjacent. Without any impeachment of his candour, we may fairly presume the cases which he has collated in the foregoing pages, to be those which presented in the most unequivocal manner the distinguishing traits of this appaling disease, and which should demonstrate triumphantly the success of his boasted *medication.* Indeed it is with an air of confidence in these particulars that they are given to the public, since he has deemed it altogether unnecessary to back them with note or comment.

From near four hundred cases, even if we suppose our author to have misnamed nine cases in ten, it would have been an easy matter to have selected six, provided there was a peculiar epidemic prevailing, which should exhibit clearly, to every one, the characteristic symptoms of the disease; and particularly since our author himself observes that " it may be more easily distinguished than any other continued fever."

Let us, then, carefully scrutinize the black vanguard of this fearful pestilence, " *et crimine ab uno disece omnes.*"

We would first observe, however, that we have some objections to the manner in which the cases are recorded. We will not *assert* that they were made up from memory, but such is certainly the appearance which they present. *Ex tempore* minutes do not appear to have been taken, for in the relation the author always makes use of the past time, as for instance, " about three o'clock the patient *had* become much easier." " July seventh. This morning the patient was found free from pain, &c." " July twelfth. To all appearance the patient *was* pretty free from disease, &c."

Now it is altogether impossible that the most tenacious memory, while exercised with such a variety and multiplicity of cases, should be able, even after the lapse of a few hours, to refer to each individual case its own peculiar phenomena. The author's attention would be more strongly attracted, and his memory more deeply impressed, by those circumstances which were most coincident with his own anticipations, and preconceived opinions. These, even by one who aimed at impartial truth, would, in cases transcribed from memory, be exhibited in strongest relief. That this is true in relation to the present cases we may fairly conclude; for, whatever may be the fact, they are *ostensibly* made up in this way, and can pass for no more than the current value which the author has himself stamped upon them. This circumstance, then, certainly weakens the testimony which they yield in relation to the disease in question.

Let us now proceed to examine the first of the cases which we have quoted, viz. that of Mrs. C——— B———.

This case is described as having been ushered in by symptoms "usually called hysterical," and really we can not perceive by what feature the sagacity of our author so promptly distinguished it from that protean disease. The previous fatigue, the costive state of the bowels, were certainly adequate causes, and in the *onset* of the disease there did not occur a single symptom which is not often exhibited by hysteria. We very well know that as fevers are ushered in by chills, so the most violent cases of hysteria attack by a kind of nervous prostration or paroxysm of sinking. We have ourselves seen cases in which the powers of life were apparently almost extinguished, even the pulse frequent, fluttering, and feeble, the extremities and indeed the whole body cold and insensible, the countenance cadaverous, and the oppression at the precordia extreme. The excruciating pain in the loins and the lower part of the abdomen, which supervened on the symptoms of *subsidentiâ* related by the author, certainly constitute the most uniform and characteristic symptom of hysteria; and indeed, whatever the author may have witnessed in the disease, there is certainly nothing recorded which can possibly distinguish the case from a strongly marked paroxysm of hysteria.

The case certainly exhibits nothing peculiar or characteristic of the disease which our author describes, *until the medication commences.* It happened very fortunately for the patient, as our author appears to think, that in the phrenzy of her distress she snatched from the hands of the attendants, and drank, "about half a fluid ounce of *tinct. opii.*" which, if we mistake not, is equal to twelve grains of opium. On the arrival of the physician at the end of an hour, her distress not having abated, an equal quantity of the same was administered per anum. On the lapse of the second hour another physician was called in, and he also gave opium *gtts* xii. and directed the same to be repeated once in four hours. In another hour the family physician arrived.

Granting that two grains of opium by injection are equal to one by the mouth, and it is obvious that, at the end of this time, the patient was under the influence of not less than *eighteen grains of opium*, the greater part of which had been taken in the first hour. Now what effects should we expect to witness at the end of this time from the above enormous quantity of this potent remedy, in a case in which we will suppose the system not to be fortified against its peculiar influence, either by habit, idiosyncracy, or any obtunding influence of the disease itself? Who need be told that the poisonous effects of opium at the end of the third hour would be manifested in a pulse "quick and gaseous, (or in other words, soft and weak, with apparent fulness,) and as infrequent as fifty-five in a minute, temperature short of the natural standard; countenance motley, principally pale, but with a few livid patches; the lips livid; tongue much contracted and pointed, its surface shrivelled and somewhat redder than natural; respiration hurried and laborious, and resembling that of a person who had (has) been making violent bodily exertion." Our author certainly deserves the credit of having here given us one of the most concise, correct, and lively descriptions of the poisonous effects of opium which can be found in the writings of any author. Let us observe how it will compare with the statements of others, and we will, indiscriminately, take the first upon which we can lay our hand. "These are succeeded by diminution of the *force* and *frequency* of the pulse, by lassitude, impaired sensibility, and sleep."

"If a larger dose be given, the symptoms of diminished action appear without any previous excitement, and are followed by delirium, stupor, deep and difficult breathing, convulsions, and death.*"

"When such a dose of opium is taken as would prove fatal if its effects were not obviated, the symptoms are insensibility, so that the patient can not be roused by any exertion; a pulse usually slow and full; deep and difficult breathing; and the countenance *generally* somewhat flushed,"† (or rather livid and mottled.)

We know very well too that a mottled appearance of the skin over the whole body often occurs, and as the effects of the agent are particularly determined to the capillary system, petecchiæ sometimes result, and even effusions of blood are known to be produced by this and other narcotics.

Now the question is, were the symptoms above related the phenomena of a peculiar disease, or were they the effects of the opium taken?

The reader has the facts before him, let him decide for himself, while we at the same time will express our strong conviction, so far as we can judge from the author's own statement, that, thus far, the secondary symptoms in this case were solely the effect of the enormous quantity of opium administered.

We would not be understood, however, to oppose the occasional use of this remedy, even in much larger doses, for we have already observed above, that the system may be, and often is, morbidly insensible to its impression. The case in question, however, does not appear to be of this character, for as we have observed, there is nothing which distinguishes it from hysteria, and in this disease, although opium, in liberal doses, and combined with antispasmodics, is an admirable remedy, yet certainly no one would think of employing more than four times the maximum dose, and that with scarcely any qualifying remedies.

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* Murray, p. 124. Vol. I. † Id. p. 130.

We should expect, of course, that it would induce, at once, indirect debility, in place of the direct prostration which it is intended to obviate. The striking coincidence of the train of symptoms recorded by the author, with those stated to be the effects of opium, are such a confirmation of the above position, that we can not but think the weight of evidence altogether in favour of the opinion expressed.

On the arrival of the family physician, another enema of *half a fluid ounce of tinct. opii.* was administered, and at the same time three grains of opium with half an ounce of spirit were given by the mouth. The amount we may safely estimate at eight grains by the mouth.

We have heard of the apparently absurd practice of employing opium, as a *remedy* for the relief of the *poisonous* effects of the same article; and indeed there is more philosophy in the principle than at first appears. When a patient is suffering under the secondary and depressing powers of opium, there is certainly indicated some powerful stimulus, which shall give a new impulse to the powers of life, and favour a re-action of the system. The first effects of opium, when not given in too great a quantity, we know to be stimulating, (and indeed our author seems not to be aware that it possesses any other.) If, then, a smaller quantity of opium than that first taken be exhibited at the proper juncture, the system will be roused by it to re-action; and if, when this effect has ceased, a still smaller quantity be exhibited, it will reach its natural standard of action, without the abrupt transition which would otherwise occur. This is certainly the only ground upon which the repetition of the article could be vindicated, and which accounts for its producing no more mischief than actually resulted. The practitioner, however, had no such views, and instead of gradually abstracting the remedy, (or the morbific cause as we would call it,) urged its continuance even in an increasing ratio; for, after having given two grains every two hours, till three o'clock, P. M., he added forty drops of the tincture, to be taken at each intermediate hour, accompanied with *ten drops* of the *arsenite* of *potash*. Thus, if our arithmetic serves us correctly, and granting that the effects of opium continue for six hours, which will not be denied, the patient was constantly under the accumulated influence of twelve grains of opium in addition to spirit and water *ad libitum*, and the free use of *Fowler's solution*.

This is *medication* with a vengeance, and we are heartily glad that our author has invented an appropriate term for his peculiar practice.

Before the tincture was added to the previous *medication*, the surface of the body had become covered with petecchiæ, and the patient had vomited once. "A slight degree of talkative delirium, and on inquiry, a considerable sense of faintness and distress was complained of at the stomach."

Who will deny that these *might* have been the effects of opium? Would any one be at all surprised if they were to be exhibited by a person who, till then in perfect health, had within twelve hours, taken thirty grains.

By referring to the case the reader will perceive that on the following day, the patient is pronounced more comfortable, although "there was a great sense of *distress* and *sinking* complained of in the epigastric region, which was uniformly aggravated by the slightest motion of the head," invariable attendants on an over-dose of opium.

This day and night, nearly the same treatment was pursued, and the symptoms were kept pretty well at bay by this course, except that the patient *vomited twice* toward morning.

It was not till the ninth that an injection was employed as the first evacuant, except nature's necessity which, it seems, had emptied the stomach three or four times. A very slight discharge followed.

The same medication was continued till the fifth day of the disease, when things appear to have come to an extremity. By the author's own statement (and we applaud his candour,) almost every symptom is at this time evidently aggravated, the pulse is small and frequent, (indicating that state of irritability which follows the depressing effects of opium,) and the skin is cold. There is distressing singultus and the rejection of every liquid taken into the stomach. What candid and impartial person can hesitate to pronounce these the effects of the enormous quantities of opium and arsenic with which the stomach had been deluged, and who will not perceive that from the very onset; the accumulation of disease has kept pace with the accumulation of medicines, until at last nature kindly steps in and snatches the patient both from the physician and the disease? Although, upon our author's principle, the indications for the continuance and even the increase of the remedies, are at this juncture, by his own statement, stronger than at any previous period of the disease, yet he at once withholds nearly all medicines, and that, not from choice, but from necessity, for the stomach will no longer receive them.

Now if the opium, arsenic, and spirit were so necessary to sustain the *sinking* patient during the progress of the disease, they were surely doubly so at this period, and if the previous practice was correct, the abstraction of them, either from choice or necessity, ought to be followed by *paroxysms of sinking* and, indeed, an aggravation of every symptom; but if on the other hand, the symptoms were created by the medicines, the withholding of them should be gradually followed by restoration to health.

For our own parts we are astonished beyond measure, that the author should have presumed to adduce this case in behalf of his principles and practice. It appears to us, that an inference hostile to his opinions is drawn from it with mathematical precision. The author can not deny that the symptoms of disease did almost uniformly increase, until he was compelled to abandon the use of medication, and from that moment is dated the amendment of the patient.

On first reading the above case, we had our sympathies as much excited as did corporal Trim, in listening to a narrative of sufferings in the Inquisition. While the *medication* was inflicting, "I had rather face a cannon," quoth Trim, "stamping," and when exhausted nature could endure no more and the wretch was finally released, "Then thank God, however," quoth Trim, "that they have not killed him."

Case II, appears in its onset to be one of a more equivocal character. It *may* have been a case of malignant fever, but there certainly is not sufficient evidence of the fact. As the symptoms are recorded, they are more characteristic of hysteria than of any thing else, until they are overwhelmed by the effects of opium. There was the same distress in the lower part of the abdomen, and the delirium may have been of the hysterical character. All the other symptoms may have been of the same nature. It is worthy of particular notice, that the pulse was perfectly natural; where then could have been the danger of using merely aromatic and diffusible stimulants, warmth, &c. until the disease should have been more evolved, and its character determined? Such a course would have answered our author's own indications better than the course which was pursued, viz. the administration of a stupifying dose of four fluid drams of laudanum by injection. The first effect of the medication was to mitigate the spasmodic affection, as we should have expected. There was still however a difficulty in swallowing, and when the attempt was made, the muscles acted convulsively and irregularly, which certainly is more characteristic of hysteria, than of a disease so paralysing in its influence as typhus syncopalis.

Forty drops of tincture of opium, and ten of the liquor of the arsenite of potassa, were now directed every two hours.

Under this treatment it is not surprising that the stomach became irritable, and the *epigastric sinking* to manifest itself, with hurried respiration, frequent pulse, &c. as soon as the first stupifying effects of the opium had gone off. The camphor, alcohol, and spirit, which had been given, were now omitted. The probability is that the remedies which had been accumulating in the stomach for some time, and which from the torpidity of the organ, had for the last hours been not much changed, were disgorged. This accounts for the fact that the continuance of the opium did not repeat immediately the same effects. We know, too, that when the system once reacts upon opium, the repetition of it will not produce the same effects as at first. Were a person to take one grain each hour for three days, it is quite certain that if he survived the first effects, he would experience its influence less on the third day than on the first. Nature would accommodate herself to the exigencies of the case.

These occurred on the eighth day. On the twelfth, the quantity of opium having been doubled on the previous days, "great irritability of the stomach took place, and all liquid medicines were rejected. The surface immediately became considerably cooler, the pulse as frequent as a hundred and twenty in a minute, the respiration hurried, and a profuse sweat took place." Who does not know that these symptoms always attend vomiting produced by opium, tobacco, or any other narcotic?

Why did our author, when these symptoms of sinking were more remarkable than at any previous period of the disease, discontinue all medication, except two grains of opium once in two hours? and why did the amendment of the patient so immediately follow?

Let the reader carefully observe that in this, as well as in the preceding case, the medication always keeps a little a-head of the disease, and he provides against any remark upon this striking circumstance, by observing that the symptoms in bad cases should be anticipated and prevented.

Wonderful and prophetic must have been the foresight of our author, if he could in every instance predict the aggravation of symptoms which so invariably followed every increase of his *medication.*

In some instances indeed this principle may be admissible, as for instance in intermittent fever, and other diseases of regular periodical paroxysms, but in diseases so irregular in their paroxysms as the present, we should only be exhausting the excitability of the system which is so much needed when the supposed paroxysms of sinking do occur. The perplexity and confusion to which it leads, must also be extreme, for nothing is more important than to distinguish clearly between the effects of medicines, and the symptoms of disease. We fear that this ambiguity has been with our author the source of a great deal of error.

The third case is one of an extraordinary character. It resembles so very nearly a case of inebriety to which we were once called, that we will take the liberty to inquire, whether during the night preceding the attack, and while he was in attendance on the sick, the patient did not make liberal use of ardent spirit. The fact that stimulus was regarded by the physicians as both the remedy and the prophylactic against this disease, might have been an apology for excess in this way, while his previous indisposition, and the night-watching, would have favoured its powerful influence.

The symptoms so strongly resemble those of intoxication, that we could not but make the above query, although we would not impeach the character of the patient and the acumen of the physician so much as to assert that this was positively the fact. If we are mistaken in our surmises, then let the case have its due weight, though we cannot perceive that any triumphant inference can be drawn from it. It is but one in three hundred and fifty, and we may fairly presume, one which best answers our author's purpose.

The two cases next detailed, are those which terminated fatally. To pronounce in decided terms the diagnosis and the practice in these instances erroneous, involves a heavy charge, but certainly it only becomes a more solemn obligation to express our opinion with promptitude and independence.

The first is the case of Miss A. C. who it seems had been long afflicted with hepatic disease.

For some days previous to the attack, she had been exceedingly exhausted by attendance, during both night and day, on the sick, and by excessive labour. She, too, was attacked with apparently hysterical symptoms, and with paroxysms of sinking, for which see the case.

It is obvious to every one that this was a case which required to be treated with the utmost tenderness. The complication of previous disease, and her state of exhaustion from fatigue, with the nervous irritability which usually accompanies it, and which manifested itself remarkably in the incipient symptoms, would have rendered her unusually sensible to every remedial as well as morbific agent. But what course did the physician pursue? From apparent apprehension that she would immediately sink, an apprehension which does not appear to be warranted by any of the cases which he has related, or which he had personally observed, he immediately exhibited forty drops of tinct. opii. Five of the arsenical solution, five of oil of peppermint, were given every *two hours,* while hot spirit and water, and hot tinct. of camphor and water were given *ad libitum.*

If we suppose the commencement of this case to have been hysteria, occurring in one who had been long affected with chronic inflammation of the liver, or other viscus, and induced by unusual fatigue, what effect should we expect from the above excess of stimulation? We may safely presume that its influence would be three times as great as under ordinary circumstances; first, from the unfortified state of the system, and second, from the want of harmony and equality of action in the vascular system, and from the diseased condition of certain parts, in consequence of which the above agents would not become equally diffused, but would spend their force upon parts already morbidly excited, and would increase vascular obstructions wherever they existed. At the same time the general excitement might not be very obvious, and would soon end in indirect debility. The first effect, however, would be to quiet the patient, and to produce some general excitement. This would be followed by frequent and feeble pulse, delirium, restlessness, and profuse sweating. The reader will observe that this was the condition of the patient on the third day, when two drams of alcohol every hour was added to the *medication,* and an extra dose of two grains of opium was given. The next day there was "a severe paroxysm of epigastric sinking. Three fluid drams of tinct. opii. (equal to four grains by the mouth,) were given by injection. In the evening there was an increase of delirium.

At eleven, while the medication was continuing, and all the medicines remaining *kindly* on the stomach, she sunk into a deep coma, the lips became purple, and the respiration interrupted. There was *effusion in the bronchiæ, and throbbing in the larger arteries.* The pulse, though seemingly full, was extremely soft and weak. Just before death there were slight convulsions.

Let it be carefully observed that, in the two first of the three preceding cases, there was frequent vomiting, and that the remedies with which the stomach was gorged, were often rejected, so that the practitioner was compelled to desist even when the patient was at the worst. In the next case, which also terminated favourably, there was copious diarrhœa, regarded as so fatal a symptom by our author, and which contended obstinately against the *medication.* In the present case, however, the first which terminates fatally, the practitioner is not foiled in this way. Every thing remains on the stomach, and from the beginning to the end, there is no evacuation, whatever, from the alimentary canal. What inference shall be drawn from these facts?

The subject of the last case, "was a person of slender constitution, and rather feeble health." The symptoms of disease in this case were less equivocal than in the preceding. They however rather indicated a gastric affection, than a case of a peculiar epidemic, characterised by a sinking of the vital powers. It commenced with pain in the bowels and diarrhœa, which was suppressed by opium. Soon after this he ate heartily, probably with a morbid appetite, a full dinner. Paroxysms of epigastric sinking occurred soon after, which we believe are not at all remarkable in persons of a similar constitution, in almost every variety of disease. In such, they very often occur some hours after the use of opium. Persons of a "slender constitution," and irritable nervous system, have often an idiosyncracy by which even a small quantity of opium will produce unpleasant effects of this character. The pulse was natural. Most persons would certainly have pronounced the disease at this period a gastric affection, and it appears to us that they could only have been influenced to form a different opinion by the prevalence of a peculiar epidemic, which had occasionally commenced in a similar manner.

We trust, however, that our scrutiny of the preceding cases on which our author so much relies, has shown that he may have been altogether mistaken with regard to the existence of such an epidemic, and if so, he certainly would not be warranted in suppressing at once, in the present case, all evacuations, and in employing only stimulant and astringent remedies. The epigastric sinking, upon which he lays so much stress, is an exceedingly vague diagnostic symptom, and is common to a variety of diseases, but belongs more particularly to certain gastric affections. It may proceed from various causes, as for instance, congestion of the portal system, morbid excitement of the mucous membranes, &c.

When attributable to these sources, it is obvious that stimulating and astringent medicines must be pernicious in the extreme, and indeed ourselves, and we presume others, have often seen paroxysms of extreme epigastric distress, produced by this class of medicines, when exhibited in these cases. It is one of the most common of those phenomena which occur when patients are said not to bear bark, brandy, &c.

It seems that our author, while the pulse was natural in strength, and while there was not much muscular prostration, (for indeed the patient used the catheter upon himself, until the last day) "enters upon a regular course of *medication*," consisting of one grain of opium every two hours, with three drams of tincture of cinchona, and the same of brandy every hour. A little wine *occasionally*. During the first night after the commencement of this course, four extra pills, of two grains each, of opium were given. It is unnecessary, however, that we should remark upon the details of the case, the practice being almost identical with that of the preceding cases. As the disease advances, the *medication* waxes stronger and stronger, until two grains of opium are given every two hours, forty *gtts* tinct. opii. as often, together with spirit, &c. There was occasional vomiting during the progress of the case, and occasionally a griping of the bowels, which threatened evacuation; these, however, were generally suppressed by extra pills of opium. In one instance only, was an enema employed, which only served to irritate the alimentary canal. On the night of his death, the patient vomited several times; there was also furious delirium, restlessness, and finally, an *epileptic* tremor, with which the patient expired. Let the candid reader decide, whether these symptoms are most characteristic of *spotted fever* or of *typhus opialis*.

That the above cases have a common character in some respects, we do not deny, but it appears to us, that they, one and all, receive their impress from the uniform and extraordinary medication which was employed. If we suppose a practitioner to be so possessed with the idea of the prevalence of a peculiar epidemic of the above character, assimilating to itself every other form of disease, as that he should see nothing in the slight affections, which are every day occurring, but the incipient symptoms of this formidable pestilence, and should order his *medication* accordingly, what would be the result?—The exhibition of opium, the suppression of accustomed evacuations, the use of astringent and stimulating remedies, would surely produce symptoms common to all; and if we suppose the practitioner to be so far infatuated as to see in the peculiar effects of his remedies, nothing but the traits of his bug-bear pestilence, his medication would of course become more vehement, and the symptoms of the disease correspondingly prominent. Unhappy the patient who at this juncture should apply to the physician for the relief of hysteria, belly-ache, diarrhœa, sick stomach, rheumatic pains, or the effects of surfeit. The dram-drinkers, and opium-takers, would perhaps escape unscathed, and perhaps some of them would even exhibit instances of remarkable and sudden cure. The vigorous powers of nature would, in others, resist the *morbific* influence. In others (and in three hundred and fifty there would be many such,) who by idiosyncracy were more susceptible of its influence, the artificial disease would assume an alarming aspect, until the powers of life should spontaneously rally, and reject every medicine introduced into the stomach. But what would be the result in those cases in which the guardian power of nature did not so readily respond, or in which they were, at an early period, overwhelmed?

On the other hand, let us now suppose the observation and opinions of the practitioner, in relation to the prevalence and character of the epidemic, to have been correct, and what inferences will follow?

It is important, however, that we should first state, that upon the appearance of the pamphlet enumerating the three hundred and fifty cases, as having occurred in the practice of one physician, Dr. Cone,* and within a short period, the good people of Middletown were astonished at this intelligence of such a formidable pestilence walking abroad among them; for it seems that this was the first intimation which the public had received of it. The authorities of the city, therefore, immediately called a meeting of the physicians for the purpose of investigating the subject. In Middletown there are several physicians, and some whose practice is more extensive than that of Dr. Cone. What then must have been the double astonishment of the authorities, when they learned that all these cases had occurred in the practice of Dr. Cone, while the other physicians concurred in reporting, that they had witnessed no cases of that character, and that the diseases then prevailing, exhibited nothing peculiar or extraordinary.

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* Dr. Miner was surely employed in consultation.

Now it is certain that there must either have been a morbid longing after Dr. Miner and his coadjutor, as one of the prominent symptoms of this disease, and which constrained the patient to send immediately for them, in consequence of which every individual case fell into their hands; or the other physicians must have had their due proportion.

As we dare not trust to the former supposition, we must admit the latter. We presume, therefore, that Dr. Cone's cases did not constitute more than one-fourth of the whole number which occurred in the city and immediate vicinity. If then we suppose our author to be correct in his principles and practice, if, as he says, the practice commonly resorted to in the ordinary occurrence of disease, bleeding, vomiting, and purging so certainly rendered mild cases bad, and bad cases fatal, what horrible carnage must have been produced by his brethren of the faculty, so blindly urging the lancet, purges and emetics, and without any suspicion of the prevalence of a peculiar epidemic.

If we suppose that there occurred five hundred cases in the practice of the other physicians, and certainly this is a very moderate estimate; and if we suppose, too, that they were altogether unaware of the peculiar character of the disease, and of the treatment of our author, so absolutely necessary to conduct it to a favourable result; we may safely estimate that not less than one in five would have fallen victims to their ignorance and obstinacy. From the earnestness with which our author urges the exclusive propriety of his *medication*, and the unequivocal language in which he condemns and deprecates every other mode of practice, as the suggestion of madness and folly, we can not think that a fundamental error in the diagnosis and treatment of the disease, could have been attended with a less fatal result.

But, had this been the case, would the authorities of the city have been under the necessity of instituting an inquiry to ascertain the existence of such an appaling pestilence? Would not the frequent hearse, and the black livery of grief, have told, in every street, the melancholy truth? Would the physicians, while their dead were multiplying around them, have presumed to report the non-existence of an epidemic which was declaring itself in language that could not be mistaken?

But, although we might say more, we have perhaps said enough, and some may even think too much and too censoriously. Let it be observed, however, that we have no where impeached the honesty of Dr. Miner's intentions, although, even for this, he has given us an example in his own writings; nor have we denied him an ordinary share of talent and learning; but we do, without reserve, declare that the few pages which we have examined above, exhibit the most melancholy instance of self deception and pertinacity of opinion, that we have ever witnessed.

To Dr. Miner we owe no apology, for the freedom of our remarks. He who lavishes upon his brethren of the profession, the epithets of ignorant, prejudiced, mad, barbarous, malevolent, and temporising, and even makes his systematic writings the vehicles of personal sarcasm, can point out nothing in the above strictures, which he can pronounce uncharitable.

N. B. In justice to the author, we would here notice a circumstance which had escaped our observation, that minutes of several of the above cases were made by Mr. L. at the time of their occurrence.

Art. III.—*Commentaries on Diseases of the Stomach and Bowels of Children.* By Robley Dunglison, M. D. &c. &c. Lond. 8vo. pp. 201, 1824.

To the philanthropist nothing can be more interesting than a knowledge of those enemies of the human race, whose baneful influence is directed against the most vulnerable and helpless class of our species. While in the enjoyment of fully developed faculties, we can detect merely so much of the insidious inroads of disease, as to fill us with apprehension, while they suggest, in many instances, only a probable means of defence, how much more dreadful is it when its malignant operations are screened from detection in the suffering victim, who can express no more than indefinite distress by his unintelligible cries.

He who can trace the progress of disease and devise the means to intercept its action, is entitled to a rank among the best and greatest, for as life is the only human possession which, when lost cannot be regained, he, who saves a life, is the author of the greatest benefit that man can confer on man. To all, therefore, who investigate the nature, and discover antidotes to the effects of those morbific agents, which render human life uncertain, much gratitude is due, and still more praise belongs to him whose genius and devotion to humanity, enable him to surmount the peculiar difficulties which are presented to those who undertake the relief of infantile distress, which has no tongue for its expression.

With these sentiments we opened the present volume, in the prefactory pages of which, our expectations were in no small degree excited by the declaration, that it was intended for the "professional reader."

Our author very justly condemns the sentiment, that we must despair of obtaining a correct diagnosis of the diseases of children, on account of the peculiar difficulties which the want of intelligence and the helplessness of the patient present, and we give him credit for encouraging us to exertion in this department of our profession, by assuring us that the desired object is undoubtedly within our reach.

"It has been a general complaint," Dr. Dunglison observes, "that whilst the diseases of adults have monopolized the attention of professional writers, those of childhood—a period of the greatest disease and mortality, and during which many individuals who, if permitted to live, might have proved most useful and ornamental members of society, are prematurely snatched from existence—have been comparatively neglected. This has too much arisen from an idea that the diseases of young children cannot be satisfactorily investigated, from their not being able to describe their complaints, and that, consequently, the practice of the physicians are generally empirical. This is not, however, correct. To the experienced eye, the deviations from health are readily recognised. The state of the skin, secretions, excretions, tongue, eye, breath, fatness or leanness, gestures, cries, &c. &c. will sufficiently indicate the difference between the healthy and diseased condition." This latter observation is quite correct: it is a fact that many have remarked, that "a sick child is known by his cries," and at present there exists but little doubt of the ability of a good physician to distinguish a sick child from a healthy one, or in the words of our author, readily to recognise the deviations from health.

This great object accomplished, we next look for the means of detecting the kind of deviation from health, the locality of the abberration from healthy action, the consequences to be expected from the diseased action, and the means best calculated for its suppression. The *séméiologie physiognomonique* of M. Jadelot, is here introduced as furnishing an index to various forms and localities of disease. Notwithstanding the extensive experience upon which M. Jadelot has founded his ingenious key to the diagnosis of infantine diseases, we cannot yet think ourselves authorised to accept it as a sufficient index to our prescriptions.

The expression of the countenance is undoubtedly, in a great majority of instances, a sufficient monitor of the existence of disease; not only in infants but in patients of all varieties of age and condition; but we feel that a peculiar and perhaps a very rare talent is necessary for the discrimination of analogous diseases, by certain traits of the countenance. Indeed we despair of arriving at that degree of skill in *séméologie physiognomonique* which enabled M. Jadelot to detect " an accidental complication of verminous affections," " by an unusually marked state of the *nasal trait.*"

It is true that every state of disease attended by pain, will give rise to certain changes of the countenance from its usual expression, but affections of the mind will produce the same effect; and it is not always easy to distinguish in an infant's face, between the expressions which arise from moral and physical causes—far more difficult, if at all possible, must it be, to trace in the ever varying lineaments of the face, the history and location of a peculiar disease.

Our author, however, has not confined himself to this method of relieving us from the difficulties under which we labour in treating the diseases of children. He has specified a number of the morbid affections of infants, and we are happy in recognising in his description of them, the same diseases, the same symptoms, and the same treatment which we have been familiar with heretofore. In the beginning of his work he has favoured us with a classification of the various worms, as they are vulgarly called, which infest the human intestine. The observations of Rudolphi, Bremser and Frank, are here condensed into a very clear system of helminthology. A knowledge of the descriptive character and habits of the various species of worms which give rise to so much misery, and indeed mortality in our species, is undoubtedly important, inasmuch as it forms a basis for authelmintic practice. The various kinds of entozoa, locate themselves in various parts of the human body, indicate their existence by various symptoms, and are to be destroyed and expelled by various means. A knowledge of the species of worm, is therefore, in some measure necessary to a correct prescription of vermifuge medicine. Our author has accordingly prepared us, by his minute selections from the natural history of the entozoa, for a full and infallible diagnosis and practice, in all cases of worms in children. We therefore follow him in the hope of being instructed in all the mysteries of inverminology and authelmintology, and in many secrets which it would be well for the *professional reader* to learn.

In treating the question of the origin of intestinal worms, our author evinces his enmity to the doctrine of equivocal generation.

" With respect to the mode," he observes, " in which worms are generated in the human body, various opinions have been entertained from the earliest ages to the present period. The chief controvertists may, however, be *condensed* into two great classes; viz. those who believe in equivocal generation, and those who consider that the germs must be always received from without.

" The first opinion ranks among its supporters almost all the names of antiquity since the time of Aristotle, as well as those of Needham, Buffon, Patrinus, Treviranus, Rudolphi, Bremser, Himly, and others, of the moderns; whilst the second class comprises those who believe in the Harveian maxim, *omne vivum ex ovo*—amongst whom may be ranged the majority of the physiologists of the present day." " There *seems* every reason," he adds, " for supposing that the latter class of believers is the most correct; whilst at the same time it must be admitted that there are some anomalies which it is very difficult, under such belief to reconcile."

What these anomalies are, our author does not inform us, nor can we recollect any instances that are incompatible with the doctrine which is honoured by Dr. Dunglison's approbation, and in support of which he quotes the following observations from Dr. Good:* " that the atmosphere is freighted with myriads of insect eggs, that elude our senses, and that such eggs, when they meet with a proper bed, are hatched in a few hours, into a perfect form, is clear to every one who has attended to the rapid and wonderful effects of what, in common language, is called a blight upon plantations and gardens. I have seen, as probably many who read this work have also, a hop-ground completely overrun and desolated by the aphis *humuli*, or hop-green-louse, within twelve hours after a honey-dew has slowly swept through the plantation, and stimulated the leaves of the hop to the morbid secretion of a saccharine and viscid juice, which, while it destroys the young shoots by exhaustion, renders them a favourite resort for this insect, and a cherishing *nidus* for the millions of little dots that are its eggs. The latter are hatched within eight and forty hours after their deposit, and succeeded by a host of other eggs of the same kind; or, if the blight take place in an early part of the autumn, by hosts of the young insects produced viviparously; for, in different seasons of the year, the *aphis* breeds both ways.

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* Study of Medicine, Vol. i.

Now it is highly probable that there are minute eggs or ovula, of innumerable kinds of animalcules, floating in myriads of myriads through the atmosphere, so diminutive as to bear no larger proportion to the eggs of the aphis, than these bear to those of the wren or the hedge-sparrow; protected at the same time from destruction by the filmy integument which surrounds them, till they can meet with a proper nest for their reception, and a proper stimulating power to quicken them into life; and which, with respect to many of them, are only found obvious to the senses in different descriptions of animal fluids. The same fact occurs in the mineral kingdom; stagnant water, though purified by distillation, and confined in a marble basin, will, in a short time, become loaded on its surface or *about its sides*, (qu.) with various species of coufervas; while the interior will be peopled with microscopic animalcules.

So while damp cellars are covered with boletuses, agarics and other funguses, the driest brick walls are often lined with lichens and mosses. We see nothing of the animal and vegetable eggs and seeds by which all this is effected; but we know that they exist in the atmosphere, and that this is the medium of their circulation. How far the tales may be true, of living animals being found in abscesses in different parts of the body, and especially in scirrous and pustulous exanthems, this is not the place to inquire; but conceding the fact, we can only account for it by supposing their respective ovula to have been admitted into the system with the air or food we take in; and to have been separated as soon as they acquired possession of a proper nursery.

"We have strong reason to believe, however, that many of the eggs or animalcules that are traced in animal fluids, occasionally find other receptacles out of the body that answer their purpose as well, and seem to keep up their respective species; and, consequently, that provide a stock of eggs, larvas, or insects prepared to take possession of any decomposing animal substance, as soon as it is ready for their reception: and we are hence able to account for the presence of animalcules in such situations, without being driven to the necessity of supposing them to have been generated therein; and see how it is possible that they should continue to exist in a regular chain of succession, instead of being produced anomalously and equivocally by the *bildungstrieb* (as the German physiologists call it,) or formative effort of a living principle in substances in which life has confessedly ceased to exist."

Rudolphi, also has observed, that various species of worms commonly found in the human intestines, are occasionally met with in stagnant water and rivulets. Linnæus, Gadd, Unzer, Tissot, Leuwenhoek, Schaffer, and Palmer, have asserted the same fact from their several experience. But it is not necessary to pursue this subject farther. The many facilities which are afforded for the intrusion of animalculæ or the lava of insects into different parts of the human body, especially into the alimentary canal, and the protection from injury which they enjoy, on account of their minuteness, affords a much more rational explanation of invermination than the unaccountable and absurd doctrine of equivocal generation; and we believe that it is now almost universally received. The strongest objection to the doctrine of the germs of intestinal worms being received with the food, is, that they must in this case escape from the digestive powers of the stomach, &c. to which they are exposed. The fact, that worms are seldom found in children whose digestive functions are healthy and strong, but on the contrary, that they are abundant only when the digestive powers are much impaired, goes far to favour the idea, that their germs are capable of withstanding the action of the stomach to a certain degree, and pass uninjured through that organ, when it is not in possession of its natural vigour.

As it is undoubtedly true that a debility of the digestive organs generally, if not always precedes the appearance of worms in children, and remains while they continue to infest the intestine, our author very properly enumerates among his most important remedies, the diet, habits, and medicines, which are calculated to invigorate the system. The propriety of this treatment will be admitted both by the advocates of equivocal generation, and those who believe in the admission of ova or animalculi *ab externo:* for the former party argue that it is by partial or unhealthy digestion, that the peculiar matter is produced from which the entozoa derive their existence. Thus we find that, in worms, as in a large number of diseases, although we differ very widely in the pathology, the arguments derived from various principles, happily tend to the same practical conclusion.

With regard to the particular authelmintics and general practice recommended in the "commentaries," Dr. Dunglison has favoured us with nothing new, and we forbear to repeat what we presume every "professional reader" is already familiar with.

One original observation, however, contained in this chapter, we feel in duty bound to record, in evidence of the author's sagacity; namely, that *worms are not the less to be* *dreaded when they attack organs essential to life.* It is truly matter of astonishment, that the very fact that worms could even be guilty of attacking an "*organ essential to life*," should have escaped the observation of the numerous sages who have heretofore inquired into their villainous practices.

The next disease of which our author treats, is constipation and retention of the meconium. "This substance," he observes, "occasionally adheres with so much pertinacity to the parieties of the intestines, as to resist the most energetic purgatives; whilst, at other times, one portion is evacuated, and the remainder retained for a longer or shorter period, giving rise to symptoms of considerable intestinal disorder.

"Whatever may be the use of this substance during the fœtal state, its *excretion* soon after birth is of the utmost importance; as its presence in the intestinal canal must interfere with the proper assimilation of the nutriment taken by the infant; and not only so, but it is found to give occasion to tormina, flatulence, and other symptoms of irritation. Whenever, therefore, an infant, some days after birth, is observed to be affected with these symptoms, it is not unlikely that they may have been produced by a retention of some portion of the meconium, although a *lapse of time* may have *occurred* sufficient to render it probable that the whole had been discharged."

The colostrum failing in its usual effect of expelling the meconium, Dr. D. recommends, of course, the exhibition of laxatives and cathartics. He recommends the insertion of a piece of yellow soap into the rectum, which will sometimes succeed when the common pharmacopæia of the nursery has been exhausted. But we regret that he discountenances the employment of clysters in these cases, as the meconium generally occupies the lower intestines, these applications are peculiarly adapted to its removal, and may, in a great many instances, supercede the necessity of introducing medicinal articles into the stomach; a practice which is troublesome, and which on various accounts ought never to be unnecessarily resorted to in the treatment of infants. The doctor's objection to enemata, is that " they are liable in careless hands, to be given at *too high a temperature.*" If we are to avoid the use of all medicines which would be dangerous in careless hands, the shortest way would be to close our materia medica at once, and proscribe all manner of apothecaries.

In the treatment of constipation at more advanced ages, whether hereditary or from accidental causes, we find in the "commentaries, &c." nothing new or remarkable; we may however observe, *en passant*, that the author generally prefers in these cases the use of aloes, heretofore strongly recommended by professor Hamilton of Edinburgh.

In speaking of calomel, we regret that our author has neglected to discriminate the cases in which it may be particularly useful. He has indeed despatched the consideration of this peculiar and excellent remedy for various disorders of the bowels, with a degree of brevity that argues but little in favour of his knowledge of its character, or of the diseases to which the chylopoiétic viscera are liable. If this portion of the " commentaries, &c." had appeared at the time when Paracelsus introduced chemical compounds into the materia medica, it would not have excited much surprise; but in the present improved state of medical science, we know of no excuse for this negligent manner of commenting upon diseases and their remedies, except one which may apply to the particular work before us, and that is, that the author has, in more instances than one, brought himself into a dilemma, from which it would be quite unreasonable to expect any human ingenuity to extricate him, by exalting to the rank of an independent disease, a mere symptom which is common to many diseases, vastly different in their nature and location. Constipation may arise from so many causes, that it is generally to be considered as symptomatic of diseases, not originally depending upon a torpor of the bowels. In diseases of the liver, the stomach and the mesenteric glands, the bowels are frequently and obstinately constipated; and in many of these cases, simple cathartics succeed only in producing temporary discharges, without appearing to meliorate the character of the disease. Under these circumstances, the whole list of materia medica affords no rival to calomel. In marasmus, attended by vitiated secretions of bile, obstructions of the mesenteric glands, and greater or less derangement of the whole process of digestion, it is from calomel alone that we can expect a permanent restoration of healthy action.

The chapter on constipation is concluded with the following advice, which is quite in good keeping, at least with the desultory character of the preceding commentary. "When the state of constipation has once been removed, its recurrence must be obviated by proper attention. For this purpose, the use of cathartics had better be gradually discontinued; and, especially if there be any hereditary predisposition to the affection, the use of the aperient food, where the child is too old to be at the breast, should be inculcated: such as arrowroot sweetened with brown sugar or treacle, or beer *edulcorated* with the same materials. Where the child is at the breast, the diet of the mother and child must be regulated as has been previously recommended.

"Where, along with constipation, children have been affected with languor, yellowness of the eyes and skin, high coloured state of urine, and a clayey condition of the alvine evacuations, in addition to purgatives, the food must be regulated, bitter remedies ordered, and warm fomentations or frictions applied to the abdomen every night."

What can possibly be more indefinite and unsatisfactory than advice of this kind? or what practice more perfectly futile, supposing that the aforesaid languor, yellowness, &c. &c. proceeded as the case would most probably be, from a diseased liver? But we forget that these "commentaries, &c." are intended for the "professional reader," who we presume is expected to make up for deficiencies, correct errors, &c. according to his own knowledge and sagacity.

The chapter devoted to the consideration of "acidity, flatulence, and colic," is quite too common-place to require any comment.

The fourth chapter contains the results of the author's reading on the nature and mode of treatment of diarrhœa. We are here presented with copious extracts from M. Andral's dissections in cases of this disease, and quotations from other authors, tending to prove that the mucous coat of the intestines is sometimes inflamed, and in other instances simply or mechanically engorged with blood. Hence, the discharge of blood, in some cases of diarrhœa, is not to be attributed to inflammation or abrasion of the internal tissue of the intestine. M. Andral is of opinion that the blood may be effused into the cellular tissue surrounding the intestine, without a concomitant injection of the mucous coat—but when the mucous coat is *mechanically* injected, it exhales blood into the cavity of the intestine. This state of the parts may arise from irritating matter contained in the intestines, or from the obstruction of the vena porta, as Morgagni has observed. Our author, however, has given us but little clue to a distinction, through the symptoms exhibited, between diarrhœa of this kind, and diarrhœa attended by inflammation. Nevertheless, he cautions us to beware how we prescribe without having made such discrimination.

"The great difficulty," he observes, "is properly to discriminate the cases in which purgatives are to be advised, from those in which they should be carefully abstained from. In general, where the child is suffering from copious, watery stools, without there being much pyrexia, or pain of the abdomen on pressure, present a dose of some brisk cathartic, as calomel joined with rhubarb: scammony or jalap, may be usefully administered; but should symptoms of abdominal inflammation be concomitant, the more gentle laxatives, as cold-drawn castor oil, rhubarb and magnesia, or syrup of senna, should be preferred, merely for the purpose of evacuating the upper portions of the intestinal tube of any irritating matter which may be present. To fulfil a similar indication as regards the *super-diaphragmatic* (qu.) portion of the *digestive canal*, an ipecacuanha emetic may be advisable."

After the numerous and almost insurmountable obstacles, which our author has prepared us to expect, in the way of a correct discrimination between those cases which required active cathartics, and those in which these agents are inadmissible, we are very agreeably surprised to find that a touch of the pulse, and a little pressure on the abdomen will be sufficient to remove all our fears. But unfortunately we recollect that a few pages back the author has informed us, that nothing is more common than the absence of all kind of pain in cases where numerous ulcerations have covered the internal surface of the intestines, and on the other hand, it is not unusual to find patients complain of acute pain in the abdomen, although the mucous coat of the intestines is not in the least inflamed. It is no uncommon thing for doctors to disagree—but which side shall we take when a doctor disagrees with himself.

We have nothing particularly to object to in the treatment recommended by Dr. D. for the various forms of diarrhœa, as it is generally that which has been employed very universally. One exception, though, we must make, namely, the omission of blood-letting in those varieties of the disease confessedly febrile and inflammatory.

The fifth chapter, on vomiting and cholera, contains nothing more than is known in every nursery: we pass also through the commentaries or apthæ, inflammation of the stomach and intersusceptio, without finding any thing to arrest our attention; nor, indeed, would the soporific effect of this learned work, have been interrupted in the concluding pages, but for the sudden appearance of a rhetorical figure that is truly calculated to appal professor Beattie himself. "In gastritis, recourse must be had, as in every other dangerous internal inflammation, to bleeding, either generally or by leeches, according to the age of the patient. *This should form the sheet anchor!*" Here is an anchor foundry with a vengeance, which if brought to perfection, might be turned to much better account, than copying commentaries on the diseases of children.

Upon the whole, to do the author of the present work full justice, which is in all instances our desire, we must grant that he has read numerous works on the diseases of children, and that he has selected from them much useful matter—though we think that he has neglected the pathological department of his work: and also that his practice, generally, is not marked by the precision and energy, which the present state of medical science would warrant. There appears to be too much of that unfortunate disposition to temporise—to try the effect of this, that, and the other palliative, before we *venture* upon a decisive remedy. This practice is not only calculated to injure the character of our profession, but we are also convinced from much observation, that it has resulted in the loss of many lives, which might otherwise have been prolonged.

One other remark we must add. As the author of the "commentaries, &c." has displayed so much knowledge of various languages, we cannot account for the strange liberties which he has taken with the rules of his own, (we presume that he is an Englishman.) In comparing the state of the system induced by excessive cathartics, with the effects produced by worms, he says, that it "almost merits as much attention as the worms *themselves.*" "The *oleum empyreumaticum* was found to be extremely prejudicial to *parasitic existence when out of the body.*" Some puzzling questions are suggested by this beautifully formed sentence. Firstly what is "parasitic existence?" We assure our readers that out of pure devotion to their interests we have rubbed all the hair from the neighbourhood of our organs of perception, judgment and invention, in endeavouring to excite them to furnish us with an interpretation of this momentous phrase—

but all in vain. Sometime we have considered it abstractedly "parasitic existence"—again we have tried it conditionally, *i. e.* "out of the body"—but then, again, to be *parasitic*, it must be connected with a body. Here the *oleum empyreumaticum* came to our relief, for in all probability the author meant the condition, "out of the body," to relate to it—But again, if the *oleum empyreumaticum* was "out of the body," how could it effect the *parasitic existence*, which in this case must be in the body?

We can form no decent idea of "*flatulent milk*," p. 103. The *extenuation* of the parieties of the intestines is also a curious process, p. 116. To "shield, (*i. e.* protect,) a nauseous flavour" appears to be a very unnecessary measure, p. 77. "Animalculæ gregariously involved amongst each other," (p. 70.) is a very awkward attempt at learned affectation.

Art. IV.—*A Treatise on the Physical and Medical Treatment of Children.* By William P. Dewees, M. D. Member of the American Philosophical Society of Philadelphia, and of the Philadelphia Medical Society; Lecturer on Midwifery, &c. H. C. Carey & Lea. 1825. 8vo. pp. 496.

It is not long, since we had occasion to give an account of an excellent work on obstetrics by the author of the present work. We always feel a pleasure in noticing the writings of Dr. Dewees, because we are sure of always finding much which will repay us for the trouble of perusing them; and afford us an opportunity of communicating interesting information to our readers. The present volume is divided into two parts. In the first, the author treats circumstantially, and, according to our judgment, ably, of the *physical education* of children.

Although we regard this a highly interesting subject, we shall not now bestow any particular attention on it, but pass on at once to an analysis of the second part of the volume, which treats of the *diseases of children*. We do this because we wish to bestow much more attention upon the former subject than our occupations will at present admit; and we therefore defer the consideration of this part, until our next number, in which it is our intention to enter into a full and elaborate discussion on this subject.

Chapter I. Of the Want of Respiration. Dr. Dewees thinks that "the premature tying of the cord is often, if not always, injurious to the child." In common with White, Denman, Baudeloque, and others, he is of opinion that the cord should not be tied until it ceases to pulsate. Dr. White observes, "that the pulsation of the arteries proves the existence of the fœtal life. The existence of the fœtal life proves the imperfection of the animal life. While the animal life is imperfect, the fœtal life ought not to be destroyed. The navel string, therefore, should never be divided while there is any pulsation in its arteries." Dr. Dewees accords fully with Dr. White on this point, and combats the opinion expressed by Burns, that there is "no necessity of delaying the division of the cord when the child is vigorous and cries lustily." For our own part we are perfectly satisfied that the opinion advocated by our author, is correct, and that its observance is of much more importance than the sentiments of Burns would lead the young practitioner to suspect.

Chapter II. Of Syncope, or Fainting. Speaking of the mode of managing new-born infants in a state of great feebleness, Dr. Dewees observes, that he has witnessed "two instances of complete recovery, where, from all the data that could be collected, the children had but just exceeded the sixth month. These were neither washed nor dressed for many days; they were preserved in a uniform temperature by means of a stove and a bed of cotton. A few drops of warm whey, from time to time was all the food they received for three weeks; but on which they throve surprisingly." Had these children been subjected to the fatiguing operation of washing and dressing, the probability, as our author observes, is, that they would not have lived.

> "It now and then happens, that a child may be rather feeble when first born, but recover its powers by proper attention, and every thing giving promise of doing well—when of a sudden, it will become pale, flaccid, cold, with a long interval between each breathing, and at last respiration appears to stop; the fingers and hands become blue, or black; the lips livid, and the eyes fixed, and but half closed; the pulse extinct—in a word, looking "the image of death." After remaining in this condition for a short time, a slight convulsive motion will appear to play about the mouth; an imperfect inspiration will be taken, followed by an expiration, attended by a peculiar noise; the lips become less livid, as do the hands and nails; the eyes move languidly, and the pulse may now by close attention be perceived, like a vibrating thread, at the wrist; an attempt to cry is now made, but the sound is so feeble, that it can be heard only at a very short distance—and this finishes the paroxysm.
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> "After the 'fit,' as it is called, has terminated, the child will appear languid, and uneasy, for some time; it will generally swallow, if any fluid be presented to it, provided it be not too soon after the paroxysm. A discharge from the bowels almost always takes place during the 'fit,' of a small quantity of a very green fluid. These spells are repeated at longer or shorter intervals, unless the disease be arrested by the influence of remedies, or death closes the scene."

The best mode of treating cases of this kind, consists in the application of flannels wrung out of warm spirits of any kind, and in exhibiting from time to time a little wine whey, or some other mildly stimulating liquid.

Chapter III. Of the Meconium. Dr. Dewees considers it of great importance to carry off completely this offensive recrement from the bowels of new-born infants. Upon this subject there is but little difference of opinion among practitioners. Our author gives the following case illustrative of the bad effects of the retention of this recrementitious material.

> "A child born healthy, had its bowels liberally purged, as it was supposed, by the ordinary remedies. It remained perfectly well for several days, and had taken the breast freely. At about the eighth day, the eyes and skin appeared rather yellow, though its urine was not altered in colour. Its bowels

were a little affected, and had frequent, but very sparing stools; it hiccoughed very frequently; its skin was dry and hot; it became very restless, and refused the breast, though evidently very thirsty, as it would receive with greediness, water, or any other thin fluid, from a spoon. It would often start, and at such times would move its limbs violently for half a minute together. Its tongue was very white, and loaded with a substance resembling a stratum of coagulated milk. It did not puke, though evidently distressed at stomach, as it would frequently gag, but could get nothing up.

"Believing its distress to arise from some irritating cause in the first passages, we ordered it a tea-spoonful of warmed castor oil; to be repeated in two hours, if the first did not succeed. A second, and a third, were given without moving the bowels. Magnesia, in five grain doses, followed by a tea-spoonful or two of lemonade, were then given. It took a scruple of this medicine, with no better effect. Its stomach now began to revolt at every thing that could be offered it; and the purgative medicines were in consequence suspended. The abdomen began to swell, and to become very tense and shining. It could lie but on its back, with its little legs drawn close up to the belly, and was evidently in a state of great suffering. Its cries were piteous, and incessant; and its whole skin became bedewed with a cold sweat.

"Injections of various kinds were thrown up the rectum; the child was placed in the warm bath; but no stools were procured, for the little tinged mucus which came away every now and then by severe straining, did not amount to a stool. We had upon several late occasions with children, found a solution of the carbonate of soda, very useful in aiding the operation of medicine, in cases of constipation; we accordingly determined to administer a grain of this article in a tea-spoonful of luke-warm water, every fifteen minutes, until ten grains were taken.

"At the expiration of two hours and a-half, the bowels began to move, and in the course of three or four hours, there were ten evacuations, each of which evidently contained a quantity of the meconium, with the exception of the two first. The purging was now kept up by an additional tea-spoonful of castor oil, and was permitted to go on, until the meconium was no longer visible in the evacuations. Dr. Underwood gives a similar history; but one, in which a much larger quantity of medicine was exhibited."

Chapter IV. Of Jaundice. Children frequently acquire an icterode appearance, without however being actually affected with jaundice. In this state the eyes are not yellow, nor is the urine tinged with bile. In true jaundice, however, these appearances always exist. Jaundice in its aggravated form is always a very serious complaint in new-born infants; Dr. Dewees objects to the use of emetics in this complaint. In opposition to the sentiments of Underwood, Burns, and Armstrong, he observes, that they " have not only failed in his hands to remove the disease, but have rendered the stomach so irritable, as not to receive any other remedy willingly." He advises the use of small doses of castor oil as the first step in the treatment of this disease. If the stools are not mixed with bile, small doses of calomel should be given on the following day, and continued until the bowels are freely moved. The purgative operation of the calomel may be aided by small doses of super-carbonate of soda. Our own experience is decidedly in favour of small doses of calomel in this disease. We have usually given this article in combination with ipecacuanha, in doses of one fourth of a grain of each.

Chapter V. Of Erysipelas. This is generally a disease of great danger in new-born infants. It is particularly apt to occur in crowded lying-in-hospitals, but is also not unfrequently met with in private practice. It generally appears about the nates, the neck, the small of the back, and face. It is a disease by no means of easy management. Dr. Dewees advises blisters where the situation affected will admit of their proper application. Where this cannot be done, he uses strong mercurial ointment, applied freely to the inflamed part. " We use this ointment differently, however," says Dr. D. " in the several stages of this inflammation; we shall therefore describe our method: and

" 1. Where the part is inflamed, but not yet vesicated. When we see the inflammation in this stage, we cause the whole of the reddened part, as well as a portion of the sound skin, to be covered with the ointment; which is to be renewed, when the part is deprived of any portion of it.

"2. Where the part is vesicated, but the vesicles not opened. In this case, we cause the vesicles to be carefully opened, and the ointment applied as just directed for the first condition.

"3. Where the vesicles have opened spontaneously, and the part has become encrusted; but the inflammation is spread to either a considerable or limited extent. In this case, we direct the ointment to be applied only to the surrounding inflamed margin, and on a portion of the sound skin.

"4. Where portions have proceeded to suppurate, yet a part of the surrounding skin is inflamed. Under such circumstances, we open the collections of matter as early as possible; and apply the ointment to the margin, as above directed."

In our own practice we have frequently employed mercurial ointment in this disease, and very commonly with perfect success. In a few instances we have used a solution of corrosive sublimate, in the proportion of two grains to an ounce of water, and have found it quite as efficacious as the mercurial ointment. This practice was first mentioned to us by Dr. Schott of this city. Small and repeated doses of calomel, so as to keep the bowels gently open, ought never to be omitted in the early stages of the complaint. There always exists considerable hepatic derangement in this affection; and the bowels are almost uniformly disordered.

Chapter VI. Of the Suppression of Urine. New-born infants frequently do not pass any urine for many hours after birth. In some instances this if not relieved will occasion great distress and even death. Our author relates the following case.

"A very remarkable instance of this kind fell under the notice of our friend Dr. Parrish and ourselves, which we trust will require no apology for giving it in detail. Mrs. —— was delivered of a healthy baby, on the 15th of June, 1822. On the 20th, in the evening, the child showed uneasiness; and on the 21st, it cried violently, and continued to be much pained until the 25th. A variety of simple remedies were used for the relief of the urine, which had been either very sparingly passed, or entirely suppressed, most probably from the 20th,—but without success. On the morning of the 25th, at ten o'clock, we found the abdomen very much distended, even to the scrobiculus cordis; the skin was shining, and the superficial veins were very much enlarged. The child had several very sparing stools, of a dark green colour: two tea-spoonsful of castor oil were given in the course of the morning. At half past one o'clock P. M., Dr. Parrish introduced a small flexible catheter, and drew off at one time eighteen ounces and a-half of a straw or cider-coloured urine. At seven o'clock of the same day, the child appeared perfectly relieved; it slept soundly, and took nourishment freely. Two more tea-spoonsful of castor oil had been given since the visit at noon, but without moving the bowels; nor did any water pass. As the child was easy, it was permitted to rest without disturbance.

"From this time, the water was regularly drawn off by the catheter, until the child's death, which happened on the 28th. It had gradually declined, from the time of our first visit, and its mouth had become very sore. Permission was not obtained to examine it.

"We have recorded this case on account of its great practical importance, though unfortunate in its issue. We have seen several instances similar in their general appearance to the one just related, and like it ending in death: we have strong reason to believe they may have died of suppression of urine, though we were assured that they had passed water."

Chapter VII. Of Apthæ. Dr. Dewees does not think that apthæ are often extended to the alimentary canal. He gives an account of a dissection in which he found the whole tract of the œsophagus literally blocked up with an apthous incrustation to the "*valve of the cordia*?" We presume the Dr. means the *cardiac* extremity of the œsophagus; we are not aware that there is any valve at this part. "The inner coat," says he, "of the stomach bore some marks of inflammation, as did several portions of the intestines." We believe ourselves that the apthæ seldom extend to the intestinal tube, but that they do so occasionally, we have had unequivocal proof from post mortem examination. In an examination of a case of this kind, which we lately made, we found not only the œsophagus, but a considerable portion of the small intestines covered with an apthous incrustation.

Dr. Dewees thinks that there is no good evidence of the disease arising from some peculiar condition of the stomach, or of its being a sympathetic affection, and he gives the following reasons for believing that it may be otherwise.

"1. We have recently seen this affection in two cases, where the stomach and bowels were in the most perfect order before the eruption; but they became disturbed a little during the progress of the disease.

"2. That this complaint has been very often removed by topical applications alone, where the efflorescence has been very considerable, and where there was no remedy of any kind addressed to the stomach and bowels.

"3. That we do not uniformly see this complaint, where there has existed great disorder of both stomach and bowels, and these of a permanent kind.

"4. That however the stomach and bowels may be disturbed by acidity or other inconvenience; or however long these may continue, if the child has had this complaint, it is not renewed, though the person is not exempt from a second attack in the same way as after measles or small-pox; for in certain chronic affections they may be again visited by this disease.

"5. That this affection is sometimes epidemic, as stated above; for Dr. Good informs us, that "not only all the children of the same family, however cautiously separated from one another, but many of those of the same neighbourhood, have been known at times to suffer from it simultaneously." (Vol. II. p. 391.)

"6. That this affection is almost always ushered in by some cerebral affection; as great drowsiness, or watchfulness—the first by far most common.

"7. That other portions of mucous membranes are liable to the same kind of eruption, without the condition of stomach or bowels being instrumental in its production; for we have seen it most plentiful, within the labia pudendi, as well as on the internal face of the prepuce."

Dr. Dewees states that in obstinate cases attended by frequent discharges from the bowels—particularly when the stools exhibit streaks of blood, the most decided advantage may often be obtained from a tea-spoonful of the *oil of butter,* given three or four times a day. "The oil of butter is prepared by putting a lump of perfectly sweet butter into a tea-cup, and pouring on it a quantity of boiling water, and agitating it well with a tea-spoon, that it may be deprived of its salt—the oil is then skimmed off as it is wanted; should it not be sufficiently fluid, pour off the cold water each time, and add fresh warm water." We agree perfectly with Dr. Dewees in considering a solution of borax as the best local application for apthæ. When the mouth becomes red, livid, or ulcerated, a weak infusion of peruvian bark is an excellent remedy; about the third of a tea-spoonful is to be put in the child's mouth every hour or two.

Chapter VIII. Of Colic. This disease is very generally the consequence of improper feeding, during the first month after birth. It is in fact commonly the direct result of indigestion,—brought on by improper food or by some peculiar quality of the mother's milk. It is therefore obvious that the first and most important curative measure, is a regulation or change of the diet. As a palliative Dr. D. states that he has been in the habit of employing the following mixture, and that it has rarely failed to give instant relief.

℞	Magnes. Calcinat.	-	℈j.
	Tinct. Assafœtid.	-	gtt lx.
	—— Thebaic	-	gtt xx.
	Aq. Fontanæ	- .	℥j. M.

"Of this, twenty drops are to be given, when the child is in pain, and if not relieved in half an hour, ten drops more are to be administered. This dose is for a child from two weeks to a month old."

Chapter IX. Of Opthalmia. Dr. D. thinks that the remote cause of the opthalmia of new-born infants, is always gonorrhœal or leucorrhœal matter applied to the child during its birth. His reasons for this opinion are:

> "1. Because it always makes its appearance within ten or twelve days after birth—a period in which such a cause might be supposed to act.

"2. Because in every instance in which we have met with this affection, we learned upon inquiry, that the mother was subject to leucorrhœa; and in some few instances, in loose characters, to gonorrhœa.

"3. The suddenness, extent, and severity of the inflammation, together with the profuseness of the suppuration, would seem to denote the application of some violent irritant to this tender and susceptible organ."

Leeching, purging with calomel and magnesia, and mild astringent washes to the eyes, are the principle means to be employed in combatting this disease. The astringent collyria must not however be used, until the inflammatory character of the disease has been reduced by local depletory and other antiphlogistic measures.

Chapter X. Of Ulceration of the Mouth. Ulcerations sometimes occur about the frænum linguæ, and along the inferior margin of the tongue, and gums, in infants, which often become a source of great uneasiness to the little patients. After purging the child pretty freely, Dr. D. has never known the use of the following topical application to fail.

℞	Sulph. Cupri	-	gr. x.
	P. C. Peruv.	-	ʒii.
	—— G. Arab.	-	ʒi.
	Mel. Comm.	-	ʒii.
	Aq. Fontanæ	-	ʒiii. m. et f. sol.

The sores are to be touched with this mixture and solution, twice a-day. "This," says Dr. Dewees, "has always put a stop to the disease."

Chapter XI. Inflammation and Swelling of the Breasts of New-born Children. If these swellings are left to themselves, or simply covered with emolient poultices, they never become troublesome. Rough handling and pressing, however, as is often done with the absurd view of pressing out the milk, never fails to do injury, by exciting violent inflammation and suppuration. We have lately seen a large abscess extending more than three inches in circumference, produced by such pernicious interference of an ignorant nurse.

Chapter XII. Of Dentition. Chapter XIII. Of the Diseases arising from Dentition. Of these the crustea lactea is the most disagreeable and troublesome. It is asserted by some that this eruption cannot be removed without running the risk of doing more serious injury to the child. Dr. D. is not of this opinion. He does not hesitate to attempt the relief of this disease by the most prompt remedies. His mode of treatment is to diminish the quantity of nourishment of every kind, and at the same time order small doses of sulphur, or sulphur and magnesia, in frequent doses, so as to keep the bowels loose, but not severely purged. Having purged the bowels, he commences with small doses of calomel according to the following prescription.

℞ Calom. ppt. gr. x.
Creta ppt. ℈j. m. div. in part. xx æquales.

One of these is to be taken every morning and evening. If they purge, a drop or half a drop of laudanum must be added to each dose.

Dr. D. goes on to treat of the various other cutaneous eruptions, particularly incident to suckling infants; such as the strophulus confertus or tooth rash, strophulus intertinetus or red gum, strophulus albidus or white gum, strophulus volaticus, strophulus candidus, and sore ears——.

Chapter XIV. Of Tongue Tie. Chapter XV. Of Bleeding from the Navel String. Chapter XVI. Of Ulceration or Imperfect Healing of the Navel. When the navel exhibits an elevated ulceration of its whole surface, it may be readily healed by sprinkling it with white lead, or powdered gall-nuts, or calomel. When the ulcerated navel forms a kind of button with a narrow base, all that is necessary is to pass a ligature round it sufficiently tight to strangulate it. When this button has a broad base, the ligature cannot be applied; escarotics must therefore be used as in the first case. A pretty strong solution of nitrate of silver will answer very well.

Chapter XVII. Of Hydrocele. Chapter XVIII. Of

Umbilical Hernia. Chapter XIX. Of Inguinal Hernia. Chapter XX. Of Abscess of the Hip Joint. Dr. Dewees observes: "To Dr. Physick are we indebted for the proper mode of treating abscess of the hip joint. It was he who first suggested constant purging, and entire rest, and to which this formidable disease so often yields, when employed under proper circumstances," The plan recommended by Dr. Physick, is thus described by Dr. Dewees.

> "The child must abstain from all animal food or broths; he must be laid prostrate upon his bed or mattress, and this without exercising the limb, but as little as possible; he must be bled freely from the arm if the pulse be active, or leeched upon the hip, if the bleeding be not indicated; these must be repeated in proportion to pain, or fever; if either come on. The bowels must be purged daily, or every other day, by the exhibition of cremor-tartar and jalap, in doses suited to the age of the patient, and this persevered in, until amendment is obvious, or the cure completed. Under this apparently weakening plan, it is astonishing sometimes to see how health and strength improve. Where it is impossible to confine the patient, much advantage is found from the curved splint, made to fit the hip and thigh. The ingenious Mr. William Rush (ship-carver) was very successful in adapting the splint to the shape of the parts concerned. To show how easily, and commonly, this case is mistaken for rheumatism, we will relate one case, of several of similar kind. In June 1823, we were requested to visit Miss ———, aged fourteen; she was from the country; she was there treated for a rheumatism in the knee, by stimulating, and other applications, for some time. At the request of a relation residing in the city, she was brought down for farther advice. We soon discovered the complaint to be a hip disease; and we wrote a letter of instructions for its treatment. After our taking leave, it was agreed she should remain in town to put the proposed plan in execution, and she accordingly commenced forthwith, and this with as much perseverance as success. She was bled and leeched twice; purged every day, or every other day at farthest, with jalap and cremor-tartar; confined closely to her bed; and observed the most abstemious diet, for two months; at the end of which time, we had the pleasure to return her to her anxious parent perfectly restored; and up to this time remains well."

In the *Chapters XXI.—XXII.—XXIII.—XXIV.*—the author treats of, *Abscess within the Ear; Of Adhesion of the Labia Pudendi; Of the Diabetes of Children; and Of Incontinence of Urine.* On each of these subjects the author makes judicious pathological and practical observations.

Chapter XXV. Of Constipation. Chapter XXVI. Of Vomiting. Vomiting in very young children is not always to be considered as a disease. Dr. D. divides the vomiting of infants into idiopathic, or spontaneous and sympathetic, or provoked.

He calls that idiopathic vomiting, when the contents of suckling infants are thrown up in consequence of the stomach having been "compelled to receive too much; the distention becomes a source of irritation, and the act of vomiting is produced." Aliquando bonus Homerus domitat.—The Dr. has said that *idiopathic* is spontaneous, and *sympathetic, provoked* vomiting. What can we call that vomiting which is excited by the irritation of over distention? Is this not *provoked* vomiting? Why then call it idiopathic or spontaneous, in contradistinction to "*provoked?*" The error is manifest, but it is of no practical consequence. This kind of vomiting is not to be considered as of any serious consequence.

When the vomiting occurs from a primary affection, situated remotely from the stomach, it amounts to disease, and requires remediate interference. Certain fevers, affections of the head, kidneys, neck of the bladder, liver, and intestines, are among the most common causes of sympathetic vomiting. The management of vomitings of this kind must of course depend almost entirely in the treatment of the original affection.

Chapter XXVII. Of Diarrhœa. In relation to the diet proper in diarrhœa, Dr. Dewees, very properly objects to the declaration of Dr. Cheyne, that, "an animal diet produces less irritation, than one which is solely composed of vegetable matter." Quite the contrary is unquestionably the case. There is perhaps in the majority of instances of this disease, a phlogosed state of the mucous membrane of the intestinal canal; or at least a high state of irritation, approaching to the inflamed condition; in this state, reason and experience declare against the use of animal food. The more soothing and unirritating the diet, the better will it be adapted to the disease. " Reduced milk, rennet whey, gum arabic water, thin sago, tapioca, or arrow-root," says Dr. Dewees, " are much more proper in all the complaints of the bowels, than any animal juice, however much diluted." We agree fully also with our author, in the opinion he expresses, " that during the acute form of the disease where purging is necessary, where there is pain, and fever, the less the child takes into the stomach the better. The only proper thing at such times, is a little of the mother's milk, if the child be not weaned, or the occasional use of thin gum arabic water."

Where there is much nausea, Dr. Dewees advises small doses of calomel both with a view to its emetic and aperient effects. " Calomel in proper doses," says he, " is the best possible remedy where we wish to cleanse the stomach; for it is almost as certain to cause puking, where there is nausea in this disease, as a medicine *professedly* (?) emetic, without the inconvenience of the latter remedy. The calomel in such cases had always better be given in divided doses—say, the full dose divided into three parts, and a portion of it given every hour, until its intended effects are produced."

After the stomach and bowels have been cleansed by appropriate remedies, we have always derived the greatest advantage in this complaint, from very minute doses of calomel, ipecacuanha, and prepared chalk. The one-eighth of a grain of calomel, with a quarter of a grain of ipecacuanha, and three grains of prepared chalk, should be given every two or three hours, according to the urgency of the case. Dr. D. very correctly observes:

" We may remark, before we go farther, since the position is of constant application, that it is not a matter of indifference what substance we use as a cathartic in any one species of diarrhœa; for success will very often depend upon the proper choice. Thus, neither castor oil nor rhubarb, would be so effectual as magnesia, in that diarrhœa in which the fæces had a predominating acid in them; nor would magnesia be so successful as either castor oil, or rhubarb, where there was an absence of acidity, as it requires a combination, to a greater or lesser extent, with such a substance, to render it efficient.

"It may be proper further to remark, that during the operation of medicine, very little food should be given the child; and never, any of a solid kind."

Lienteric Diarrhœa. This variety of diarrhœa comes on during the chronic state of ordinary diarrhœa. At first some one article of diet only, is observed to pass the bowels in an undigested state, as "potato, apple, or other vegetable substance." This is soon followed by the passage of other articles of food in an unchanged state; and finally, "every thing almost that enters the stomach is speedily conveyed through the intestines, with little or no appearance of having been acted upon by the powers of the stomach." The appetite is almost always voracious, and the thirst is considerable.

An interesting case is related by our author, which as it gives a full view of his plan of treating this disease, we shall quote at length.

"The daughter of L. A. aged ten months, had a pretty serious attack of billious diarrhœa, in consequence of her teeth passing with difficulty through the gums. She was however relieved of this, by small doses of calomel, the occasional use of laudanum, and by cutting her gums. Being an only child, and a great pet, especially, with two or three aunts, who were doomed to "single blessedness," she was too early indulged in improper articles of food, though she was ordered to be confined to the milk of her mother. She was permitted to taste of every thing she craved, though several of these articles were observed to pass the bowels unchanged—among these were portions of Irish, and sweet potatoes, and raisins. This gave no alarm to the loving aunts, or to the inexperienced mother; and she was permitted for a while longer to gratify her capricious desires, until the stomach lost controul over every thing received in it; and of course its contents were transported through the bowels unchanged. We were now again sent for.

"There was neither nausea, nor vomiting in this case; but the thirst was great; the urine small in quantity: high coloured; and of a very strong smell. The child began to fall away, and its strength to decline rapidly. We ordered that no kind of food whatever should be given, save that of the milk of the mother, and that only once in four hours, and then not in full quantity. Should the thirst require more fluid than the milk, to satisfy it, by giving from time to time a tea-spoonful of cold water. To put woollen stockings on its legs; flannel it was already wearing on its body. To have the abdomen rubbed three or four times a-day, for ten minutes at a time, with the bare warm hand. To not awake the child when asleep, under any pretence whatever; to have her taken across the river in the steam boat two or three times in the afternoon, when the weather was suitable.

"In addition to this, she was to take four drops of chalybeate wine, and a quarter drop of laudanum every two hours, in a few drops of sweetened water, when awake. This plan was pursued for two or three days before any change was perceived; but at the end of this time it was observed, that the food remained rather longer in the stomach after nursing, though the milk seemed to pass off unchanged, with some small tinges of brighter yellow than before.

"Thinking advantage might be derived from stimulating the external surface of the abdomen more powerfully than by the frictions of the hand, we ordered the tartar emetic ointment in the proportion of a dram of the tartrite, to an ounce of simple cerate; a portion of this to be applied once a-day over the whole surface. The quantity of laudanum was increased to half a drop, every two hours; the nursing, drink, and exercise as before.

"At the expiration of three more days, the discharges from the bowels were less frequent, the milk was perceived to be slightly curdled;* the bile more evident, the urine rather more abundant, and the skin of a more uniform and natural warmth. The ointment had produced no effect upon the skin; it was ordered to be rubbed twice a-day—no more nourishment, and the same drink.

"At the end of three more days the stools had become less frequent; they bore evident marks of digestion, and were assuming a more decided tone of yellow. The skin was beginning to show signs of irritation; the ointment continued; the laudanum increased to three-fourths of a drop; the nursing, drink, and exercise, to be continued as before.

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* In some cases, there appears to be an excess of acid; and the milk passes through in the form of whey and coagulum.

"At the expiration of another period of three days, we found every thing much changed for the better—had had but two evacuations for the last twenty-four hours—digestion much more decided; stronger evidences of bile; the urine much freer, lighter coloured, and less rank in smell. The skin of the abdomen pretty much irritated. The laudanum was not increased; the nursing was permitted to be a little more in quantity, but not oftener; the water was sweetened now with a little loaf sugar, as the thirst was considerably abated.

"Another interval of three days had passed. One stool only per diem, but it was large; some portions of white curd mixed with the new yellow fæces—fæces pretty offensive; urine sufficiently abundant; the abdomen much irritated; the skin and pulse natural. It may be well to observe, that the pulse was little or not at all affected during the whole time, on which account we did not notice it hitherto in our reports.

"As the mother's milk was sufficient in quantity, as well as good in quality, we ordered the child to be exclusively confined to it—but that it might be nursed rather more frequently; to permit the vesications on the abdomen to heal gradually; to continue the laudanum, but much less frequently, say, three or four times a-day; and should the bowels now become rather confined, of which of course there was a risk, to have them opened by an injection of molasses and water.

"The child was now ordered to the country, from which it returned in about three weeks, in perfect health."

Chapter XXVIII. Of Cholera Infantum. The description given of this disease, by Dr. Dewees, appears to us to be more accurate than any we remember to have seen. Upon the whole, however, there is nothing suggested either in relation to the cause or mode of treatment, which is novel, and we shall not therefore stop to give any particular account of this chapter.

Chapter XXIX. Of Pertussis. Dr. Dewees thinks that whooping cough "depends on causes of a more general and pervading influence than contagion."

"That it does in some instances arise from other causes than contagion, seems quite certain. Willis, who was the first to describe it, declares it to be an epidemic, occurring most commonly in spring, and autumn. By Hoffmann, it is said to have spread in Berlin to a great extent, in the same way. In the tenth volume of the Medical Repository of New-York, Dr. Willey gives an account of the disease having suddenly broken out in Block Island, and where it prevailed widely, without the inhabitants of the place having had any intercourse with an infected source. It is a rule, with few or no exceptions, that, where a disease can be traced to atmospherical influence, it does not prove contagious. Nature, indeed, can hardly employ two such opposite causes to produce the same effect.*

Bleeding is one of the most important remediate means when there is considerable febrile excitement. In some instances it becomes necessary to repeat this evacuation three or four times in the course of a week, before the inflammatory action can be sufficiently subdued. Emetics are universally employed. Dr. Dewees regards Coxe's Hive Syrup as decidedly the best article to produce vomiting in this disease.† Calomel is the best laxative we can employ. Dr. Dewees thinks that the duration of this disease may be as certainly abridged by proper remediate treatment, as any other febrile disease; and in this, we perfectly agree with him. Dr. Dewees does not mention Belladonna, in this disease. On the continent of Europe, this article is considered

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* It is a well known fact, that many become affected, where every precaution is taken to avoid contagion; and that the disease is uniformly relieved, or even cured, by a removal beyond the limits of the supposed distempered atmosphere.

† The following is the recipe for making the compound syrup of squills, or Coxe's hive syrup. Take of

Seneca snake root bruised Squills dried and bruised	each half a pound.
Water - - - -	eight pounds.

Boil together over a slow fire till the water is half consumed; strain off the liquor, and then add of strained honey four pints.

Boil the honey and the strained liquor to six pounds, or to the consistence of a syrup; and to every pound of the syrup, add sixteen grains of tartar emetic, that is, one grain to every ounce.

as almost a specific in whooping cough. Borda speaks of it in terms of unlimited praise. Children, says he, to all appearance past recovery, have been saved by means of this remedy. Hufeland, Schæffer, and Marc, speak of it in similar terms of praise, and Alibert states, that in France a similar success has attended the employment of this remedy. We have ourselves prescribed it in this disease, and although we did not derive any very decisive advantages from it, we had sufficient evidence that its influence tends to oppose the disease.

The remaining portion of this work is devoted to the consideration of cynanche tonsillaris; cynanche trachealis; worms; scarlatina; measles; urticaria; burns; prolapsus ani; whitlow; discharges from the vagina, and scurfiness of the head.

ART. V.—*Medical Researches on the Effects of Iodine, in Bronchocele, Paralysis, Chorea, Scrophula, Fistula Lachrymalis, Deafness, Dysphagia, White Swelling, and Distortions of the Spine.* By ALEXANDER MANSON, M. D., Physician to the General Hospital, and St. Mary's Hospital and Dispensary, Nottingham. London. 1825.

A WRITER never pays so high a compliment to the understanding of his readers, nor expresses so unreserved a confidence in the value of what he communicates, as when he presents without comment, a body of well arranged facts, not the culled props of an hypothesis, nor the fortuitous aggregation of unmeaning data. The tacit preface which every reader supplies to such a book, informs him that he is to draw his own inferences, and in proportion to the importance of the results, to attach value to the premises on which they are grounded. The volume which we are about to examine, is of this character, and the object of it is to determine the precise value of an exceedingly interesting therapeutic agent, which chemistry has recently added to the pharmacopœia.

Like most new remedies, iodine has undoubtedly been by some extolled above its real merits; the proofs of its efficacy, however, are already sufficiently numerous to render it one of the most important articles of the materia medica.

The information which we possess in relation to its powers, is as yet scarcely any thing more than empyrical. Its influence over certain diseases, has been determined by experiment, but we are not yet able to ascertain its modus operandi, nor with certainty, the set of organs to which its effects are particularly determined, and consequently cannot refer it to its proper class. At present we must content ourselves with observing its effects in the variety of diseases, in which it may be employed, and of which some common character or trait, may lead us to a more determinate idea of its remedial nature. This, indeed, is the order of inquiry which has lead to what scientific information we have of the character and powers of almost every article of the materia medica.

While there prevailed a belief in specifics, corresponding to each individual disease, the empyrical use of remedies existed in the same degree; in consequence of which almost every substance in nature, and particularly such as possessed any remarkable sensible properties, was successively tested as a medical agent. It is almost impossible to name an article that exists naturally, which was not employed, and for a variety of diseases. The medicinal virtues of many of the most valuable articles were thus fortuitously ascertained, and their modus operandi afterwards determined upon physiological principles. At the present day, as we possess so great a variety of agents, adequate to answer nearly all the indications which we may hope ever to fulfil, and as the idea of natural specifics has been long ago abandoned, it would be altogether unwarrantable to experiment upon the sick with those articles which may yet remain untried, unless there should exist some analogy, or other circumstance, which may suggest their use. We find that the medicinal agents are naturally divided into classes, the individuals of each of which have a similar influence upon the human system.

The probability is, that we already possess articles of each one of these classes, and which respond to all the general indications which can ever be answered by medicinal agents. It is in vain to think of developing any remedy which shall operate in a way or degree materially different from some of those which we now possess. All that we can rationally hope to accomplish in this way, is to add to the present list, articles which may answer more completely indications that we are able already in a measure to fulfil, or the qualified effects of which may better adapt them to particular cases.

The medicinal properties of iodine, were first employed in the burnt sponge, although it was not then known to exist in it. Perhaps the disgusting taste of this article first recommended it to the empyrical practitioners. The medicinal effects of the sponge, were so decided, that although regarded as a nostrum, and rejected from many of the pharmacopœias, it maintained a great reputation with the vulgar, and was even used by many of the faculty, though most regarded its medical virtues as attributable to the alkali which the article contained, and preferred the use of that article in a more scientific form, but by no means with an equal degree of success. It has since been ascertained, that iodine, which exists in many marine productions, confers upon the burnt sponge its active properties. The chemical character and relations of this exceedingly interesting substance, it is not our province to detail; they are to be found in the books of chemistry. To acquaint our readers with its medicinal virtues, we propose to quote cases, of which the book under consideration is made up, of every variety of disease in which it was employed by the author. These will illustrate its effects in bronchocele paralysis, chorea, scrophula, fistula lachrymalis, deafness, dysphagia, white-swelling, morbus coxarius, curved spine.

The cases are of unquestionable authority, being derived from a respectable source, and recorded with all those circumstances which confirm the authenticity of reports of this kind.

The following extract will acquaint our readers with the form employed by the author:

"At my request, Mr. Thompson (at that time the Apothecary of the General Hospital, near Nottingham,) procured some iodine, one dram of which was dissolved in two ounces and a-half of the rectified spirit,* supplied to the hospital, being exactly double the quantity of spirit employed by Dr. Coindet, consequently, one drop of his tincture is exactly equal to two drops of the tincture used by myself. I was compelled to use a tincture of a different strength from that of the ingenious physician of Geneva, as the rectified spirit of the hospital would not dissolve the iodine in the proportion which he employs, and I found double the quantity of rectified spirit added in portions, and assisted by trituration, only sufficient to dissolve and keep permanently suspended the quantity of iodine he has directed. This tincture I have employed for the last three years, and I have never found any deposition of iodine, or change in the sensible qualities of the tincture to take place, an occurrence which is reported to have happened tot he tincture employed by Dr. Coindet, and others, who have imitated him.

"Case I.—Hannah Wollatt, æt. sixteen, frame-work knitter, Hucknall, admitted as an out-patient of the Nottingham General Hospital, the 6th of March, 1821. Labours under bronchocele of considerable size, that presses on the trachea so much as to occasion shortness of breath and wheezing. It is three years since the gland first began to enlarge. Has not yet menstruated. Complexion florid. Lips thick. Her aunt labours under bronchocele, or, as she calls it, a thick neck.

"Capiat Pil. Aloes cum Myrra gr. x. h. s. si tarda est alvus.

"℞. Pulv. Sodæ Carbon. et Pulv. Tragacæ. C. āā. ℥ss. Misce et divide in Pulv. xx. Capiat i. ter in die ex aqua.

"*March 9th.* Is nearly in the same state. Pills move her once in twenty-four hours. Contr. Remed.

"*March 16th.* There is no change in the tumour, and her breathing is no better. Pills keep the body open, appetite good. P. 84 and soft. Sk. cool. T. clean. Catamenia have not yet appeared. Omittr. Pulveres.

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* Specific gravity .916.

"Contr. Pil. Aloes cum. Myrrha h. s. pro re nata. Sumat Tæ. Iodini gutt. x. ter in die ex aquæ cyatho vinario.

"*March* 23*d.* The tumour is considerably smaller and softer. Breathing improved and wheezes less. Has had three or four loose motions daily. Contr. Pilæ. Aper. si opus sit. Capt. Tæ. Iodini gutt. xv. ter in die.

"*March* 30*th.* Breathing not affected unless she walks fast. No wheezing now. The tumour is about half the original size and quite soft. Has three stools in twenty-four hours. Appetite very good. Drops occasion no sickness or inconvenience. Capiat Tæ. Iodini gutt. xx. ter in die. Contr. Pil. Aloes cum Myrrha p. r. n.

"*April* 13*th.* Much better. Contr. Remed.

"*April* 27*th.* The tumour is not quite dissipated. Drops agree. Contr. Remed.

"*June* 15*th.* Has been from home for the last fortnight, and has taken none of the medicines. Pergat in usu Medicamentorum.

"*July* 27*th.* The Bronchocele is quite gone. Breathing free, no wheezing. Has not yet menstruated. Says she feels quite well. Discharged cured.

"I beg leave to remark, that I was trying the effects of the carbonate of soda in this case, with a view to ascertain the efficient matter in burnt sponge, when Dr. Coindet's discovery of iodine being the active ingredient in burnt sponge was announced to the medical world to my great joy and satisfaction. I lost no time in getting a supply of the iodine, and the above case led me to believe that it possessed great remedial powers in the cure of Goitre.

"Case II.—Ruth Meakin, æt. nine, from Newthorpe, admitted an out-patient of the General Hospital, on the 27th of March, 1821. The thyroid gland is prodigiously enlarged, being nearly as thick as her neck: it has been three or four years in attaining its present size. On the left side are three enlarged conglobate glands resting on the surface of the tumour. Does not experience any inconvenience in her breathing from the tumour. Her father and three other children labour under bronchocele. Her mother and five children are perfectly free from the disease. The children have all been brought up together in the same house. General health, good. Bowels, regular. Sumat Tæ. Iodini, gutt. x. ter in die ex aqua.

"*April* 6*th.* Bronchocele no smaller or softer. Conglobate glands in the same state. B. regular. Capiat Tæ. Iodini gutt. xv. ter in die ex aqua.

"*April* 13*th.* Tumour said to have diminished half an inch last week. Contr. remed.

"*June* 15*th.* Has taken fifteen drops of the tincture three times a-day regularly. The neck and tumour measures two inches less than when she was admitted. The Conglobate glands have also diminished more, in proportion, than the Goitre. B. open. Tongue, clean. Capiat Tæ. Iodini gutt. xx. ter in die.

"*June* 29*th.* The tumours continue to subside. Has lost the tape with which the neck was measured. No sickness or inconvenience from the tincture. Contr. remed.

"*July* 13*th.* The left lobe is almost dissipated, the right one is still of considerable size, and rather hard. Conglobate glands continue to diminish in size. Neck measures two and a-half inches less. Contr. remed.

"*August* 3*d.* Tumour diminished a-quarter of an inch since last report. Sumat Tæ. Iodini gutt. xxv. ter in die.

"*August* 17*th.* Reported improving. Contr. remed.

"*August* 24*th.* Bronchocele not reduced in size since last report. The Conglobate glands have subsided so as not to deserve further notice. Capiat Tæ. Iodini gutt. xxx. ter in die.

"*September* 7*th.* The Bronchocele is nearly half an inch less, by measure, than on the 24th ult. B. open. Contr. remed.

"*September* 28*th.* The tumour exactly of the same size as on the 7th inst. but is rather softer. Capiat Magnes. Sulph. ʒij omni mane et Tæ. Iodini gutt: xxxv. ter in die.

"*November* 10*th.* Discharged for non-attendance.

"*November* 23*d.* Came to the Hospital this day to return thanks. There is still a greater degree of fulness in the right side of the gland than natural, but it is soft to the touch. Has passed 15 *lumbrici* since the 28th of Sept. last. Discharged cured."

"Case IV.—Miss N. æt. twenty. May 15, 1821. Born and brought up in Nottingham. Is of a florid complexion, brown hair, rather stout made. Has had a certain degree of Bronchocele for seven years; it continues gradually to increase in size, and is hard to the touch. About seven years ago, had a scrofulous ulcer in the left instep, that continued open and discharged for about four years. After the Catamenial discharge took place, the ulcer healed, but the foot generally, and particularly the instep, remains much larger and fuller than the other, so that she is obliged to have a shoe made on purpose to fit it, although the ulcer has been healed for three or four years. Has also laboured under a considerable degree of deafness for ten or twelve years, which occasions her to have a vacant look. Is in tolerable health for a person who is almost constantly in the house. Catamenia regular. Bowels only moved twice or thrice in a week.

"℞. Pil. Cambogiæ Comp. ʒi. forma in Pilulas xij. quarum sumant duas omni nocte h. s.

"℞. Tæ. Iodini ℥ss. capiat gutt. xv. ter in die ex aquæ cyatho vinario.

"*May* 16*th*. The drops last evening made her sick, and she afterwards felt very cold. Bowels costive. Has not taken the pills. Pulse 84, and of moderate strength. Statim capiat Pil. Cambogiæ, C. gr. x. et post alvi solutionem sumat Tæ. Iodini guttas x. ter in die ex aqua.

"*May* 19*th*. Tumour softer, and thinks she can move her head more freely. Contr. Pil. aper. et Tæ. Iodini.

"*May* 23*d*. Goitre smaller and a great deal softer. Her foot smaller, and not so puffy. Drops agree. B. regular. Contr. Pil. Cambogiæ. Comp. p. r. n. Sumat Tæ. Iodini gutt xv. ter in die.

"*May* 26*th*. The Bronchocele continues to diminish in size, and is much softer. The left foot also continues gradually to subside, and she can move her toes much better. Contr. Pilul. Cambogiæ. C. p. r. n. Sumat Tæ. Iodini gutt. xx. ter in die ex aqua.

"*May* 31*st*. The foot measures one inch less at the instep than it did previous to her taking the Iodine. The skin is loose and in wrinkles, from the speedy reduction in size, and the parts are much softer. The Bronchocele is also much smaller and softer, but, as the measure has been lost, I cannot ascertain the exact diminution. Contr. remed.

"*June* 5*th*. Continues to improve. Contr. remed.

"*June* 7*th*. Bronchocele has diminished three-quarters of an inch since the 31st of May. Foot no smaller since that time. Contr. remed.

"*June* 18*th*. Her neck, including the tumour, measures one inch less than on the 31st of May, and the instep also measures a-quarter of an inch less since that time. Contr. Tæ. Iodini et Pilul. Cambogiæ. Comp.

"*July* 7*th*. I have seen the patient occasionally since the last report, without making any notes or alteration in the treatment. The thyroid gland is now very little larger than natural, and her foot is so much reduced that she can wear shoes that are fellows, which she has not been able to do for the last seven years.

"*July* 14*th.* There is merely a perceptible fulness of the throat, but it is quite soft, and gives no inconvenience whatever. The feet are now nearly of a size, and she wears shoes of the same dimensions without inconvenience. A most important feature in this case has almost passed without notice —the patient's *hearing* has been restored in nearly a *perfect* degree.*—Discharged cured."

Other cases, to the number of fifteen, and equally decisive, are recorded. This chapter is continued with a tabular view of the author's hospital and private practice, of which we give only the following abstract:

GENERAL ABSTRACT.

Total number of Cases			120
From these deduct four Females twice admitted			4
Number of Individual Cases			116
Viz. *Males*—— Cured	10		
Ditto much relieved	1		
Ditto discharged for non-attendance	1		
Ditto improving under treatment	3	——Men, Total 15	
Females—— cured	66		
Ditto much relieved	9		
Ditto without relief	2		
Ditto discharged for non-attendance	10		
Ditto improving under treatment	14	—Women, Total 101	
Number of Individual Cases as stated above			116

The author concludes the history of the above, by a few remarks on the individual cases, and some general observations on the effects of the remedy.

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* I have pleasure to remark that Miss N. continued in perfect health, and without any relapse, up to the 3d of March, 1824, when I last saw her.

He has never witnessed any injury to the constitution from the long continued use of the article, nor any alarming immediate effects from overdose; on the other hand the medicine was observed to have a tonic and invigorating effect, and patients under its use felt themselves in better health and spirits than for years previous. In some individuals, he observes, that the medicine, after having been given for some time, excited head-ache, nausea, giddiness, and languor. A reduction of the dose at once obviated all these unpleasant effects. In one instance a young woman took by mistake an ounce of the tinct. which produced no other effect than to excite immediate vomiting, by which it was rejected. The following remarks are valuable.

"The power of Iodine over the absorbent system, has been noticed by Dr. Coindet, and others: it early attracted my attention, as will be seen by referring to the Remarks, No. 18; since that time, as will afterwards appear, I have had ample proof of its great power over the lymphatic system; but, I am of opinion, that it exerts no peculiar or specific power over that system of vessels and glands, but that they only participate in its general energetic effects on the whole body."

Chapter II, is made up of cases of Paralysis treated with this remedy. The pathological principle which governs its employment is set forth in the following paragraphs:

"The different species of palsy occur so frequently, and, in the great majority of cases, are so difficult to cure, that any new remedy that can effect so desirable an object, or even relieve a portion of the unfortunate individuals who labour under so severe an affliction, will, I flatter myself, be acceptable to the medical world; for, notwithstanding the great attention that has of late years been given to the pathology of palsy, and although various new remedies have been employed and recommended by ingenious men for its cure, still we must admit the melancholy fact, that palsy generally proves an obstinate an untractable disease, too often baffling all our plans, and resisting our most potent remedies.

"It was want of success with the remedies usually employed, in much slighter cases of palsy than the deplorable one I am about to detail, that led me to try a new method of curing the disease.

"The wonderful powers of Iodine, which I had recently witnessed, and a long previous acquaintance with the effects of the same remedy, as it exists in burnt sponge, in reducing morbid enlargements of the thyroid gland, led me, from analogy, to think, that in cases of palsy, from tumours, or fluids, pressing on the brain, or spinal cord, or from morbid thickening of the investing membrane of the cord itself, Iodine might prove a useful remedy, not only by stimulating the nervous system, and removing morbid tumefaction and effusion, but also by correcting the strumous state of the constitution that often gives rise to the disease."

"Case I.—James Watterton, æt. nineteen, was admitted an in-patient of the General Hospital, near Nottingham, on the 27th of March, 1821. Has been ailing since October, 1819. Says that he was first attacked with pain in the bowels, and griping. After some time the pain left the bowels, and the lower extremities became swelled and painful. His mother put his feet and legs in warm water, and after this, his neck became stiff and painful, and he soon began to be troubled with pains shooting from the neck into the left side of the head (this took place, he thinks, about nine months ago;) after the pain had continued for three months, it left him, and has not since returned. Almost immediately on the pain leaving him he lost the power of moving the left arm, and in a short time after the lower extremity of the same side became paralytic. Some time after this, he recovered the use of the left arm in a considerable degree, the lower extremity of the same side remaining paralytic, and the right half of the body, as high as the neck, was seized instantaneously with complete palsy. He has continued ever since in this wretched state, and has been getting worse, he thinks, instead of better, and passes his stools and urine involuntarily. Is pale, and of a slender spare habit. He lies in bed on his back, and is completely palsied on both sides, from the neck downwards, with the exception of the left upper extremity, over which he still has so much power as to be able to raise his hand as high as his chin, but he cannot grasp any thing with that hand. The sense of feeling is very much impaired, but not quite obliterated in the paralytic parts. There is no distortion of the face, and the patient can articulate very well. Is troubled with twitchings in the lower extremities.

"*March* 28*th*. Complains of head-ache. Bowels not moved for two days. Sumat Mist. Purgantis ℥iss quam primum.

"*March* 29*th*. Remains quite helpless. Bowels moved yesterday by the purging mixture, feels better since, and has had a good night. Skin cool. Pulse small and weak. Bowels open. Capiat Miss. Purg. ℥iss cras primo mane. Applicetur Emp Lyttæ parti cervicis posteriori, h. s.

"*April* 2. Blister acted pretty well: for three days the blistered part has been dressed with an ointment having a proportion of blistering plaster mixed with it, and the discharge is copious. Thinks he has rather more command over the left arm, but the other limbs are not better in any degree. Appetite moderate. It appears that the patient had a bloody purulent discharge from both ears, about two years ago, unattended with pain; the left ear continues to discharge a purulent looking matter; the right has not discharged any thing for some time. Contr. Mist. Purgans.

"*April* 4*th*. Continues nearly in the same state. The incontinence of urine has existed, without any improvement, since both the lower extremities became paralytic. Bowels are kept regular by the purging mixture. Pulse 84, and soft. Skin cool.

"Repetatur Mistura Purgans pro re nata Habeat Tincturæ Iodini gutt. x. ter in die ex cyatho vinario aquæ.

"*April* 6*th*. Begins to move the right arm a little, and feels better.

"Continuetur Mist. Purg. p. r. n. Sumat Tæ. Iodini gutt. xv. ter in die ex aqua.

"*April* 9*th*. Blister almost healed—to be dressed with issue ointment. Can raise the right hand nearly to the head. The power of moving the lower limbs has not improved, but the twitchings have nearly ceased, which shows some increase of muscular power. Pulse 80, and of better strength. When placed in the sitting posture in bed, can support himself better than when admitted. Bowels regular.

"Repetatur Mist. Purg. p. r. n. Habeat Tincturæ Iodini gutt. xx. ter in die ex aqua.

"*April* 10*th*. The blister has healed, and the issue ointment was not re-applied. It may be omitted. This morning first recovered the use of the lower extremities, so as to be able to move them a little, and can bend the left leg a little upon the thigh. Has more power over the left arm, and moves it about with greater freedom. Feels stronger and better. Can hold his urine now so as not to wet the bed.

"Continuentur remedia.

" *April* 14*th*. Continues to improve. On the night of the 10th instant, began to have a considerable degree of pain in the toes of the left foot, shooting towards the heel. The left lower extremity is often spasmodically drawn up towards the body, and the foot is now so exquisitely sensible, that the friction of the toes against the bed clothes is quite insupportable; so that I find him with the foot, and part of the leg, quite uncovered. The pain has broken his rest during the night, since the 10th instant. Can now raise the left hand above his head, and move it about in all directions. Has not made the same degree of improvement on the right side of the body. Takes the purging mixture every second day. Pulse 84, and rather firmer.

" Sumat Mist. Purgantis, ℥iss. alternis matutinis. Capiat Tæ. Iodini gutt. xxv. ter in die.

" *April* 16*th*. The paralytic symptoms continue to yield to the powerful influence of the Iodine. When his meat is cut he can feed himself with the left hand. Can raise the right hand to the chin, and can draw the right lower extremity up towards the body, and raise it about two inches from the bed. Says that his limbs are stiff from not being exercised—he is directed to move them as much as he can. He continues to hold his water. The perinæum and nates are raw from the former dribbling of the urine. Bowels were rather tardy—has taken a dose of the purging mixture this morning.

" Capiat Tæ. Iodini gutt. xxx. ter in die. Repetatur Mistura Purgans, p. r. n. Fricetur Perinæum Linimento Camphoræ bis in dies. Utatur Pediluvio omni nocte, h. s.

" *April* 18*th*. Continues to recover. Has less pain in the left foot. The left ear continues to discharge a little purulent matter. Pulse 84, and rather stronger. Appetite good. Bowels regular.

" Continuentur remedia.

" *April* 21*st*. Is not so well. Complains of head-ache; there is a purulent discharge from both ears. Cannot move the right arm so well as he could two days ago. Pulse 96. Ears to be injected daily with tepid water.

" Intermittatur Tinctura Iodini. Cras primo mane capiat Mist. Purg. ℥iss.

" *April* 23*d*. The purulent discharge from the ears continues. Head-ache gone. Face flushed. Can move the right arm better than on the 21st of April. Pulse 88, and firmer than on the 18th.

" Sumat Tæ. Iodini gutt. xxx. ter in die et Mist. Purg. ℥iss. alternis matutinis.

"*April* 26*th*. Head-ache became more severe yesterday, and it continues. Pulse 100, and firm. Eyes a little inflamed. Bowels open. Less discharge from the ears. Paralytic symptoms, as on the 23d instant.

"Intermittatur Tinctura Iodini. Continuetur Linimentum Camphoræ. Capiat Mist. Purg. ℥i. omni mane. Imponatur Emplastrum Lyttæ parti cervicis posteriori.

"*April* 28*th*. Blister rose well. Head-ache is relieved. Less discharge from the ear. Complains of an aching pain in the left eye. Cannot use the right arm so well as he lately could. The other extremities are in the same state they were a week ago. Bowels open by the purging mixture. A little strangury yesterday, from the blister. Pulse 96, and soft.

"Capiat Mist. Purg. ℥i. omni mane et Tinct. Iodini gutt. xv. ter in die ex aqua.

"*April* 30*th*. Can move the right arm better since last report. Blister has discharged freely—it is nearly healed. The left eye is slightly inflamed and painful. Pulse 88, and soft. Bowels open.

"Continuentur remedia. Applicentur hirudines quatuor palpebris sinistris.

"*May* 1*st*. The wounds made by the leeches bled profusely. The inflammation is almost gone, and has very little pain in the eye. Can move the right arm better than he has hitherto done. Bowels very open by the purging mixture. Pulse 80, and soft.

"Continuentur medicamenta.

"*May* 3*d*. Blister healed yesterday. Better, and can raise the right hand as high as the crown of the head. Gets up from his chair without assistance, and can stand holding by a table. Is free from pain in the eye and head-ache. Very little discharge from the ears. Bowels open.

"Continuentur remedia.

"*May* 5*th*. Has more power over the right arm and hand, and can bend and extend the right leg on the thigh, better than heretofore. Yesterday, supported by two men, he walked from his bed-room to the day ward. The left ear discharges a little purulent matter. Appetite good. Feels stronger. Bowels open to-day, but costive yesterday, having omitted the purgative. Pulse 76, moderately full, and soft. The left eye is slightly inflamed, but says he has no pain in it. Sleeps well.

"Repetatur Mist. Purg. p. r. n. Capiat Tæ. Iodini gutt. xv. ter in die.

"*May 7th.* Walks from his bed-room to the day ward, with very little assistance. Moves the right arm much better. Left eye a little inflamed. Some dulness, and specks in the cornea for eight years.

"Continuentur remedia. Applicentur hirudines duæ palpebris sinistris.

"*May 9th.* Continues to improve. Bowels open. The excoriations have healed. His skin being harsh, and rather dry, he is rubbed with the Linimentum Camphoræ.

"Continuentur Mist. Purg. Capiat Tæ. Iodini gutt. xx. ter in die.

"*May 12th.* Says he can walk a great deal better this morning. No discharge from the ears. Bowels only moved when he takes the purging mixture.

"Continuentur medicamenta.

"*May 19th.* Continues gradually to improve: this morning he walks without any assistance; but a person attends to prevent him from falling, should he lose his balance. He also continues to recover the use of his arms. The left ear discharges a little. Bowels open by art.

"Sumat Tincturæ Iodini gutt. xxv. ter in die.

"*May 21st.* I find him walking with the assistance of a stick to steady himself. Had four stools yesterday. Opacity of the cornea less, and vision considerably improved. No head-ache. Left ear discharges very little, and the offensive smell is gone. Pulse 80, and of moderate strength.

"Continuentur remedia.

"*June 2d.* Continues gradually to recover the use of all the extremities: the arms he can move in all directions; but complains of want of strength in the right one. The right knee is stiff, but he can bend the leg to nearly a right angle with the thigh. The sense of feeling, also, continues gradually to improve. Bowels not moved, unless by physic.

"Capiat Mist. Purg. ℥iss. omni mane et Tæ. Iodini gutt. xxx. ter in die. Omittatur Linimentum.

"*June 4th.* There is a little discharge from the left ear. Is gradually recovering.

"Continuentur remedia.

"*June 9th.* Can walk without a stick, or any one to prevent him from falling. He is gradually recovering the power of motion, and sense of feeling. Drops agree. Appetite good, and is now allowed full diet. A few days ago, I first observed a considerable degree of fulness in the upper and left side of the neck: the part sometimes aches for the space of a minute. Pulse 72, and soft.

“ Continuentur Mist. Purg. et Tinct. Iodini.

“ *June* 13*th.* Wrote his name with a pencil on the 11th instant. Had the misfortune to fall yesterday and hurt the right arm so much, that he cannot raise his hand to his head, on account of pain. Some head-ache last night, after the fall. Bowels open by the mixture. To use a sling to support the arm.

“ Continuentur remedia. Applicentur hirudines tres partibus dolentibus.

“ *June* 18*th.* I found him this morning walking before the Hospital. The leeches relieved the pain in the arm. Complains of stiffness and pain in the right shoulder joint, on motion. Does not now use a sling for the arm. Continues to recover.

“ Continuentur remedia.

“ *June* 23*d.* Cannot move the right arm quite so well as before the accident. For the last three days has been purged four or five times each day without taking the Purging Mixture. The medicines were omitted, and he has daily taken fifteen drops of Tincture of Opium to check the diarrhœa.

“ Cras repetantur remedia ut antea.

“ *June* 25*th.* Bowels regular. Can now walk better with the right than the left lower extremity. The right shoulder joint feels weak since the accident. There is still some swelling and stiffness in the upper and left side of the neck. Has very little discharge from the left ear, and his hearing is not impaired.

“ Capiat T. Iodini gutt. xxx. ter in die et Mist. Purgantem p. r. n.

℞. Linim. Saponis Camp. -	℥ij.
Tinct. Opii. - - -	ʒij.
Ol. Terebnithinæ Rect. -	℥ss.

“ Misce fiat Linimentum quo fricetur humerus affectus mane et hora somni.

“ *June* 30*th.* Shoulder better. Continues to recover. Complains of being weak in the loins.

“ Continuentur remedia.

“ *July* 2*d.* Is gradually recovering flesh and strength. Has the complete use of all his limbs, and the sense of feeling is as perfect as ever. Can walk without a stick, but generally uses one. His right shoulder is nearly recovered from the effects of the contusion. Has written his name with pen and ink this morning, the paper is attached to the cover of the journal kept at the Hospital. There is still a little fulness, and at times aching in the left side of the neck. The left ear continues to discharge a serous fluid with whitish flakes in it;

but, it is free from any offensive smell. Bowels regular for the last week, without the use of Purging Medicine. Tongue clean. The speck has nearly disappeared, and he now can see better with the left eye than for the last eight years. He complains chiefly of weakness.

"*July 3d.* Discharged cured."

"Case V.—Jane Everett, æt. twenty-one, servant. Was admitted under my care as an In-patient at the General Hospital, the 10th of February, 1825. Ten weeks ago, hurt her loins by falling down a flight of fifteen steps; has had pain in the loins ever since, attended with numbness, and want of proper sense of feeling. Says that she has had hard work to get up to the Hospital, from Chesterfield Street, distant about the eighth part of a mile. Bowels have not been moved for five days. Urine turbid after standing. Catamenia regular. Her hands are subject to be cold, and of a purplish colour, and the lower extremities are swollen, and of a mottled purple colour, as if she had the measles. Coughs and expectorates a great deal of phlegm, generally with some streaks of blood. P. 92, and soft. T. furred. Is directed to use the Vapour Bath at 110 degrees, three times a week.

"Capiat Misturæ Purgantis ℥ij. omni mane.

"*February 14th.* I have examined the spine this morning, and can see nothing amiss. Feels better since she has used the Vapour Bath. Vomited the Purging Mixture, and has taken half an ounce of Epsom Salts instead of it. Labours under Bronchocele, but did not mention it to me before.

"Contr. remed.

"*February 16th.* Still complains of numbness, and impaired sense of feeling in the lower half of the body. P. 84, and soft. Skin cool. B. open by the Salts.

"Contr. remed. Sumat Liquoris Iodini gutt. x. ter in die ex aqua.

"*February 18th.* Says that the feeling has returned in a considerable degree, and that the lower extremities are now twitched, and have a prickling sensation in them; and when she first gets up in the morning, the soles of her feet feel as if she were treading on the points of needles or pins.

"Contr. remed.

"*February 27th.* Has recovered the feeling and perfect use of the lower extremities, and has been free from any tingling sensation in them for three days. She wishes to return home, but I have advised her to stay a little longer, lest she should relapse.

"Contr. remed.

"*March 3d.* Complains of some return of pain in the loins, and numbness in the lower limbs. B. open.

"Capiat Liq. Iodini gutt. xij. ter in die. Continuentur alia:

"*March 6th.* Pain in the loins almost gone, and has recovered the feeling of the lower extremities, and is without any prickling sensation. Bronchocele softer.

"Capt. Liq. Iodini gutt. xv. ter in die. Contr. alia.

"*March 22d.* Bronchocele smaller and softer. Can use the lower limbs very well now, but complains of some pain above the left hip, which has been troublesome for five or six days.

"Contr. remed. Applr. Emp. Cantharidis parti dolenti h. s.

"*March 27th.* Hip easier since blistered; has still a little weakness in the loins, but no numbness in the limbs.

"Contr. remed.

"*April 2d.* Says she feels quite well now, and has no pain or numbness.

"*April 17th.* No return of the paralytic symptoms. Bronchocele almost dissipated. Is going home to Rutlandshire, and is supplied with half an ounce of the Liq. Iodini, which she is desired to take as before.

"Discharged cured."

Chapter III. is made of cases of Chorea treated with iodine, of which we quote the following:

"Case I.—Anne Harrison, æt. twelve, lace-runner, of Nottingham, admitted an Out-Patient of the General Hospital, 11th June, 1822.—For three months has laboured under Chorea in the right side of the body, which is now in a severe degree; articulates very ill; bowels generally costive; tongue a little furred. Was ordered a Powder, with Calomel, at bedtime, and a dose of Purging Mixture the following morning. After continuing the above plan for nearly a month, during which time the patient was purged every day, I find that she had greatly improved in walking, but that the involuntary motions of the arm continued, and that she could not speak better than when admitted. Conceiving that I had given the purgative plan a fair trial, on the 15th of June I ordered the same purging medicines to be exhibited, and ten grains of the Sub-Carbonate of Iron to be given in syrup three times a-day. Seven days afterwards, her father reported that the Powders had done her a deal of good, by stopping her lax and improving her appetite and strength. At this time she continued to have four or five stools daily. I directed the Sub-Carbonate of Iron to be continued, and the Purging Powder and Mixture to be given in turns only every other day, as it was evident that so much purging weakened the patient, and retarded the cure. Fourteen days after the Carbonate of Iron was exhibited, the involuntary motions had diminished very much, and she could articulate much better. The same medicines continued.

"The patient continued gradually to recover, and on the 2d of August was so well, that she could use her needle, and walk very well, and only complained of debility, and that she could not articulate quite so well as before the attack. At this time she continued to have four or five motions daily, which made me discontinue the Purging Powder. The Carbonate of Iron was ordered to be continued, and the Purging Mixture every morning, when necessary.

"*August 9th.* She now labours under involuntary motions in the extremities of the *left* side of the body. The right side is now free from twitching, or involuntary motions of the muscles. Her relations gave her three of the Purging Powders, of their own accord, in the course of last week. Stools black (from the Iron.)

"Contr. Pulv. Purg. et Mist. Purg. Omittr. Ferri. Sub-Carbonas. Capiat Infusi Gentianæ C. ℥ss. bis in die.

"*August 16th.* The involuntary motions continue in the left extremities. Articulates better. Bowels open. Stools not so dark.

"Contr. remed.

"*August 23d.* Rather better.

"Contr. remed.

"*August 30th.* The involuntary motions in the left arm have been worse since last report, but now have abated again. She was purged all last week.

"Intermittr. Pulv. Purg. Contr. alia.

"*September 6th.* Rather better. Open in the bowels.

"Contr. remed.

"*September 13th.* The Purging Mixture moves her very often. The involuntary motions continue.

"Contr. Mist. Purgans, p. r. n. Omittr. Infus Gentianæ C. Capiat Oxydi Zinci gr. x. ter in die ex syrupo.

"*September 20th.* Vomited the first dose of the Oxyde of Zinc, but retained the subsequent doses, which, she informs me, occasioned an unpleasant heat in the abdomen, with now and then a sensation of heat striking as low down as the knees. She further adds, that the Oxyde of Zinc made her chilly at first, and was succeeded by an intolerable sensation of heat; and that it has taken away her appetite. The involuntary motions have not been so frequent for the last two days.

"Capiat Oxydi Zinci gr. v. ter in die. Repetr. Mist. Purgans, p. r. n.

"*September 27th.* The involuntary motions still continue. Complains of being feverish. Has six or seven stools daily, of a light colour, but very offensive

"Omittr. Oxydum Zinci. Sumat Misturæ Purgantis ℥i. omni mane. Capiat Tæ. Iodini gutt. ex aquæ cyatho, ter in die.

"*October 4th.* Feels better. Has more command over the left arm, and the involuntary motions are much less frequent. Bowels are moved two or three times every day, and stools of a brownish yellow colour.

"Contr. Mist. Purgans. Sumat Tæ. Iodini gutt. xv. ter in die ex aqua.

"*October 11th.* Continues to improve.

"Contr. remed.

"*October 18th.* Says she is only twitched a little at times, and that she can speak very well now. Feels stronger. Appetite better. Bowels open.

"Contr. remed.

"*October 25th.* Is very little troubled with the involuntary motions or twitchings. Speaks as well as ever. Recovers flesh and strength. Bowels open, without being purged. Iodine agrees very well.

"Contr. Mist. Purg. p. r. n. Capiat. Tæ. Iodini gutt. xx.

"*November 1st.* Is very seldom twitched now. Feels an improvement in her general health. Articulates very distinctly, and to all appearance is well.

"The medicines were continued till the 22d of November, with the view of preventing a relapse, when she was discharged cured."

"Remarks.—I consider this as a very instructive case. In the first place, we observe active purging kept up for nearly a month, with very little beneficial effect. In the second place, we notice a marked improvement to take place very soon after the Carbonate of Iron was exhibited, although the aperient medicines were *diminished* in quantity. In the third place, after the disappearance of Chorea in the right side of the body, the left side was attacked by the same disease, during the exhibition of the same medicines, that had proved effectual in the cure of it on the right side, which is rather a curious fact.—Surely a loaded and disordered state of the bowels could have had no share in inducing Chorea in the left side of the body, in this instance.

" Ought not the torpid, loaded, and disordered state of the bowels in Chorea, to be considered as a consequence, rather than as the cause of the disease?

" I have already mentioned, that Chorea appears sometimes in consequence of a fright. May not other passions, as well as fear, induce the disease?

" The Carbonate of Iron having failed to prevent the disease on the left side of the body, I doubted its power to cure, and, therefore, left it off, and gave first small doses of the compound Infusion of Gentian, and, afterwards, the Oxyde of Zinc, but not finding any marked benefit from them, I directed her to take the Tincture of Iodine, which soon accomplished a cure, and, at the same time, greatly improved her general health."

" CASE II.—Mary Parrott, æt. ten, Old Radford, December 23, 1822. For the last ten days has laboured under Chorea, in the right side of the body. Her father informs me, that her right arm and leg are constantly on motion, day and night, so that she kicks off the bed-clothes; and her sister, a girl, thirteen years of age, who sleeps with her, complains of her sides being sore from the kicks she receives during the night. The edges of the eye-lids are red and raw, the eye-lashes have fallen off, and the eye-lids are generally glued together in the morning. The disease of the eye-lids has existed since she had the measles, when a child two years of age. Flesh soft. Abdomen rather larger than natural.

" Capiat Ol Ricini ʒii. omni mane.

" ℞ Tæ. Iodini ℥ss. Sumat gutt. vi. ter in die ex aqua.

" ℞ Ung. Hydr. Præcip. Alb. ℥ss.

" Illinentur tarsi palpebrarum unguento ter in die.

" *December* 28*th*. The involuntary motions continue. Has two stools daily, they are of a dark colour. The Tincture of Iodine agrees, and her father observes, that it enlivens her.

" Contr. remed.

" *January* 4*th*, 1823. Moves both the arm and leg less, and has more use of the right hand. Has been purged for the last two or three days, and her stools are more of a yellow colour, and less offensive. Eye-lids not so raw. Her father says, she is more lively than she used to be.

" Sumat Olei Ricini ʒii. alternis matutinis. Contr. remed.

" *January* 11*th*. The involuntary motions have very much diminished in frequency and strength, in both extremities. Eye-lids less red and swollen. Bowels only moved once a day since she has taken the Ol. Ricini every other morning. Her father says, that she continues to experience an enlivening effect from the Tincture of Iodine.

"Capiat Ol. Ricini omni mane si opus sit et Tæ. Iodini gutt. viii. ter in die.

"*January 18th.* Can use the right hand now to wind cotton for her father, who is a frame-work knitter. Eye-lids less red and tumefied. Bowels open. The Iodine agrees.

"Contr. remed.

"*January 25th.* The involuntary motions have entirely ceased, and she can use the extremities of the right side of the body, as well as she ever could. Eye-lids nearly well. The fulness and hardness of the abdomen are quite gone. Has two or three stools daily.

"Contr. remed.

"*February 8th.* Has had no return of the disease.

"Discharged cured."

Seven others are reported at length, and the author concludes this department with a tabular view of seventy-two cases treated by the same means.

Chapter IV. illustrates the effects of Iodine in Scrophula, and is particularly important and interesting:

"Case I.—Sarah Carlin, æt. seventeen. Admitted an Out-Patient of the General Hospital, the 17th of April, 1821. This patient was evidently of a Scrophulous constitution, and had many of the Conglobate glands in the neck, considerably enlarged, and one above the right elbow joint, with the skin somewhat inflamed. Had had a discharge of matter, sometimes tinged with blood, from the right ear, for ten years, and the sense of hearing, in that ear, was lost. She also laboured under violent inflammation of the right eye, of three weeks standing. This patient also laboured under a certain degree of Bronchocele.* She was purged, and the eye-lids were leeched freely, several times. The inflammation was so far subdued on the 28th of April, that she had a solution of the Nitrate of Silver dropped into the affected eye, on account of a small hollow ulcer in the cornea; on the 30th, she began to take fifteen drops of the Tincture of Iodine, three times a day, and the following day she swallowed about an ounce of the Tincture, which was rejected by vomiting, without any bad effects resulting from the mistake, as has been already mentioned.

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* See Tabular Veiw, and Notes, No. 18.

" On the 9th of May she was ordered twenty drops of the Tincture, three times a day; and on the 12th, the Bronchocele was dissipated, the Conglobate glands were very much reduced in size, the *discharge* from the ear had very much diminished, and she had *recovered* a certain degree of hearing. The eye was free from inflammation, the ulcer in the cornea had healed, her general health was greatly improved, and she was discharged with a supply of medicines to last for fourteen days, which was judged sufficient to complete the cure."

" REMARKS.—The Iodine was prescribed, in this case, with a view to cure the Bronchocele, but the case afforded me an opportunity, at the same time, of witnessing the effects of Iodine in reducing the swelling of the Conglobate glands, from Scrophula; and also of observing the good effects of Iodine in diminishing a morbid discharge from the ear, and restoring hearing, in a certain degree. Although the leeches had, no doubt, a very considerable share in diminishing the inflammation of the right eye, in this instance, I have no doubt, that the Iodine had a highly beneficial effect in removing the opthalmia, and curing the ulcer in the cornea, as will more fully appear when I have brought forward the facts I have observed respecting the exhibition of Iodine in Scrophulous Ophthalmia. From this time I began to exhibit the Tincture of Iodine in Scrophulous enlargement of the Glands, in Scrophulous Ophthalmia, and in Deafness, being at that time unacquainted with the employment of Iodine in Scrophula, which has since been announced by the ingenious Dr. Coindet, of Geneva."*

" CASE II.—Joseph C——, æt. forty, frame-work knitter, Hucknall Torkard, May 19th, 1821. One of the Conglobate glands, near the angle of the left jaw, is enlarged to about the size of a walnut, and is sore when pressed. The corneæ of the eyes are dim from specks, in consequence of Scrophulous Ophthalmia of seven years duration. The upper lip is very thick, prominent, and chapped. Bowels regular. Pulse natural.

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* " Coindet's 3 Mem. on Iodine Trans. by Johnson."

"Sumat Pilulæ Cambogiæ Comp. gr. x. h. s. nisi nimis fusa est alvus.

"℞ Tæ. Iodini ℥ss. Capiat gutt. xv. ter in die ex aqua.

"*June 2d.* The gland is nearly reduced one half, and is free from soreness. Eyes less inflamed. The upper lip is not so much swollen. Bowels open by the pills. Appetite better, and his general health is improved.

"Contr. remed.

"*June 16th.* The left eye is more inflamed. Gland about the size of an olive, and is free from pain or soreness, except when pressure is made upon it. Bowels tardy.

"Contr. Pilul. Capiat Tæ. Iodini gutt. xx. ter in die, et Magnes. Sulphatis ʒii. primo mane si tarda est alvus.

"*July 7th.* The gland is smaller and softer. Left eye still dim, but his vision is considerably improved, and objects do not appear red now, but nearly of the natural colour. Feels better, and stronger.

"Capiat Tæ. Iodini gutt. xxv. ter in die. Contr. alia.

"*July 21st.* Some return of inflammation in the left eye, he says from a fresh cold. The gland is very small, and feels soft and skinny.

"Contr. remed.

"*August 11th.* The gland is so small, it is not to be observed. The left cornea is still dim.

"Contr. remed.

"℞ Argenti Nitratis - gr. ii.
Aquæ Distillatæ - ℥i.

"Solve. Instillentur gutt. iv. solutionis in oculo sinistro mane et hora somni. Contr. alia.

"*September 8th.* The remains of the gland are scarcely perceptible. Says his eyes are much better, and clearer than they have been for two years past.

"Omittr. Ta. Iodini. Contr. alia.

"*October 26th.* Patient says, that the gland has almost disappeared. Left eye much clearer and stronger.—Discharged cured."

"*On the Effects of Iodine in Scrophulous Ulcers.*"

"Case I.—Miss Angelina S——, æt. fourteen, June 6th, 1821. Has laboured under Scrophulous enlargement of the Conglobate glands, in both sides of the neck, for two years. A bunch of glands in the left side of the neck, suppurated and burst in March, 1820, the ulcer healed up the following October, and broke out again in March last, and still continues to discharge. About the 1st of May, one gland, near the right angle of the jaw, and another near the clavicle of the same side, in a state of suppuration, were opened with a lancet, and a considerable quantity of a curdy purulent matter was discharged; they are now ulcers, and discharge a little. The patient also labours under some degree of enlargment of the Thyroid gland. Her father is full of scars, from Scrophulous Ulcers, that have formerly existed in his neck, and from the chin to the ears. She is of a delicate and weakly constitution. Has taken Pulv. Rhei. gr. x. and Magnes. Sulph. ʒii. every third day, and Tinct. Ferri Mur. gutt. x. three timea a day, in water, for the last five weeks. The ulcers look better ubon the whole, but as they have made no progress in healing for the last fourteen days, I have entered the case in my Journal, and have directed her to take ten drops of the Tincture of Iodine, three times a day, in a glass of water, instead of the Muriated Tincture of Iron, and to continue the Ceratum Resinæ dressings as before. On the 13th of June, all the glands were sensibly diminished in size, and the ulcers had greatly improved in appearance, with a considerable diminution of the purplish redness of the skin surrounding the ulcer. The Tincture of Iodine made her slightly sick at first, but does not occasion any inconvenience at present. Bowels regular, but stools not black as when she took the Muriated Tincture of Iron.

"Capiat Tæ. Iodini gutt. xii. ter in die. Contr. alia.

"*June 27th.* The Conglobate glands continue to subside, and the ulcers to heal, two of them have nearly closed. General health improved, and her food agrees now.

"Contr. remed.

"*July 4th.* The old ulcer, and the one near the clavicle, have cicatrized. The ulcer behind the angle of the jaw, and below the ear, continues open, and discharges; the skin around is of a reddish pulple colour. On the 30th ultimo, she began to menstruate for the first time, and the discharge has not yet entirely ceased. The Conglobateg lands continue to subside, and her general health to improve.

"Contr. remed.

"*July 18th.* The ulcer seems more disposed to heal, but the skin around is still of a deep brownish red colour. Says her appetite never was so good before. The Thyroid gland is still hard, and larger than natural.

"Capiat. Tæ. Iodini gutt. xx. ter in die.

" *August* 8*th.* Has been out of town for fourteen days. She has taken only eighteen drops of the Tincture for a dose, as she found twenty to disagree. The ulcer continues to improve in appearance, and discharges less.

" Contr. remed.

" *September* 5*th.* The ulcer is not larger than the diameter of a crow's quill. The edges of the sore have been touched with Lunar Caustic, about once a week. Glands continue to subside. Menstruates regularly. Has taken twenty-three drops of the Tincture for a dose, for fourteen days past; says they feel hot in her throat when taken in a cup full of water.

" Capiat Tæ. Iodini gutt. xxx. ter in die. Contr. alia.

" *Sept.* 26*th.* The Tincture has been gradually increased to forty drops for a dose, since last report. The ulcer to be washed with a weak solution of the Sulphate of Copper, and to be dressed with the Ceratum Cetacei.

" Sumat Tæ. Iodini gutt. xl. ter in die.

" *October* 17*th.* Appetite good. Catamenia regular. Bowels open. Tincture agrees. The ulcer is larger, from a portion of the purplish red skin having sloughed from loss of vitality.

" Contr. remed.

November 7*th.* Has not been able to procure any Iodine for fourteen days. The ulcer continues to enlarge by the purplish red skin running into ulceration. Catamenia adsunt. Five days ago began to take twenty-five drops for a dose. There is still a good deal of hardness and enlargement of the glands, in the right side of the neck.

" Capiat gutt. xl. Tæ. Iodini ter in die. Contr. alia.

' *January* 30*th*, 1822. For the last week omitted the Tincture of Iodine, by my desire; and as no progress has been made in healing the ulcer, for the last month, the Iodine is ordered to be discontinued.

" ℞ Tæ. Cinchonæ ℥ii. Capiat ægra Cochlearia ii. minima (tea-spoonsful) ter in die ex aqua. Contr. alia.

" *February* 13*th.* Ulcer looks better. Glands rather smaller. Bowels open. Appetite better of late.

" Capiat Coch. iii. minima Tæ. Cinchonæ ter in die. Contr. Ceratum Cetacei et Pulv. Aperiens p. r. n.

" *February* 20*th.* The ulcer, and skin around, which is a little excoriated, are to be washed daily with a dilute solution of the Sulphate of Zinc.

" Contr. remed.

" *March* 13*th.* The Zinc lotion has removed the rawness of the skin. A Conglobate gland near the left clavicle, suppurated, and was opened about eight days ago.

"Omittr. Ta. Cinchonæ. Contr. alia. Sumat Tæ. Iodini gutt. xxx. ter in die.

"*April 3d.* She feels better since she has resumed the use of the Iodine.

"Contr. remed.

"*May 1st.* Two glands have ended in suppuration, and been opened. As no benefit appears *now* to arise from the internal exhibition of the Iodine, it is ordered to be discontinued, and the patient is desired to take ten drops of the Muriated Tincture of Iron, three times a day.

"*May 15th.* Another abscess was opened on the 8th instant. The ulcers look better.

"Contr. Tinct. Ferri Mur. Pulv. Aperiens, p. r. n. et Cerat. Cetacei.

"*May 29th.* Glands in the neck smaller and softer, and the ulcers seem disposed to heal.

"Contr. remed.

"*June 12th.* The hardness in the site of the ulcers is very much gone, and there is that white appearance at the edges of the ulcers, which attends cicatrization when it is going on quickly. Countenance wears the appearance of health, and the eyes are brilliant.

"Contr. remed.

"*June 26th.* The ulcers continue to heal. Appetite good. Menstruates regularly.

"Contr. remed.

"*July 3d.* During the last fourteen days the ulcers have healed rapidly. The Conglobate glands that have not suppurated, have subsided to nearly the natural size. Is directed to wash the ulcers with equal parts of brandy and water, instead of the Sulphate of Zinc lotion.

"Contr. remed.

"The ulcers continued to heal, and were all cicatrized about the latter end of July, and the patient was in good health and spirits. I recommended her to wear warm clothing during the winter, and to take a dose or two of the Muriated Tincture of Iron daily, during the continuance of the cold weather, with the view of preventing a relapse."

"REMARKS.—I frequently see this patient, and am happy to be able to state, that she has remained free from the disease ever since, and has enjoyed excellent health. The Tincture of Iodine had very good effects in this case, and the last ulcer was almost closed when, unexpectedly, it became worse, and some of the glands also began to swell, and afterwards went on to suppuration, which showed, that the Iodine had lost its salutary influence. I, therefore, directed her to take Tincture of Bark, and not finding that to be of much service, I resumed the use of the Muriated Tincture of Iron, which had a much better effect the second time it was exhibited, than it had the first. I am of opinion, that had I given the Iodine in doses of from ten to fifteen drops, three times a day, it would have had a better effect than the doses of forty drops, that were latterly given, and still better, *perhaps*, if the Tinctures of Iron and Iodine had been exhibited, each for a month in turns, as the most powerful medicines often lose their effect when long continued."

Several cases of Fistula Lachrymalis are also recorded, in which the Iodine was employed with great advantage. These, however, we omit for want of room, and for the same reason we pass over several cases of Deafness, and of Dysphagia, successfully treated, and proceed to give cases exhibiting the effects of the article in White Swelling.

"CASE I.—Anne Kidd, æt. twenty-eight, married, and suckles a child, six month old. Lived in Little Guilford Street, London. Applied to me for gratuitous advice, the 12th of September, 1821. She informed me, that she had laboured under a disease in the left knee for the last twelve months; that she had been under the care of Mr. G. Surgeon, of Great Surrey Street, who recommended her to go into the country for the benefit of fresh air. Before she came into the country she was very much reduced in her flesh and strength, and had lost her appetite. Since she has been in the country, she informs me, that she has, in a great measure, recovered her flesh and strength, and says that her appetite is very good.

"The knee is uniformly swollen, and firm when pressed, without any fluctuation in the cavity of the joint, or any external redness of the skin, but the veins are much larger, and more numerous than natural, and the temperature is higher. An ulcer formed in consequence of the bite of a leech, the 3d May last, and has not since healed. Informs me, that she has had twenty-eight leeches, in the whole, applied to the knee, since it has been bad. The knee measures two inches more in circumference than the sound one, and she says that the complaint began with aching in the bone, and that the knee is sore all over when she is warm in bed. She complains of much stiffness, weakness, and pain, when she walks, and the leg is bent, in a certain degree, on the thigh. I find the following observations in my journal: the case is decidedly White Swelling, and as a collateral proof that it is of a strumous character, I have learnt, by interrogating the patient, that her father and a brother have lately died of consumption. Her bowels are inclined to be costive. Tongue a little furred.

"Sumat Magnesiæ Sulphatis ʒii. omni mane si tarda est alvus.

"℞ Tæ. Iodini ℥ss. Capiat guttas xx. ter in die ex cyatho vinario aquæ et post septimanam ægra sumat guttas xxx. ter in die. Curetur ulcus Cerato Catacei."

"Note.—This woman was desired to call upon me occasionally, but she never did so; I learnt, however, from the Druggist who furnished the medicine, that she had called several times for a supply of it, and told him, that she was a great deal better, but that was all he knew respecting the effects of the medicine. As I was anxious to know the issue of this case, I wrote to the patient's husband, requesting him to inform me respecting the benefit his wife had derived from the Medicines prescribed for her by me, but no answer was returned. I was determined, if possible, to find out how the case had terminated, and am indebted to the kindness of two of my friends for finding her out in London! but all the satisfaction or information that she would give them was, that her knee was perfectly well."

"Case II.—Henry Richardson, æt. seven, Exchange Court, Mount Street, November 3d, 1821. His left knee has been swollen between four and five months. The skin is of the natural colour, but the knee is painful when pressed, or when he walks or stretches out the leg in bed. The left knee measures about an inch more than the sound one. I have no doubt of the disease being White Swelling: as a collateral proof I may observe, that his maternal aunt once laboured under White Swelling in the knee, which terminated in a stiff joint, so that she is now obliged to walk on her tip-toe.

I directed a blister to be applied to each side of the patella, and desired his father to give him a quarter of an ounce of Epsom Salts every morning, and to bring him to me in the course of a few days.

"*November* 6*th*. Thinks the knee rather easier since the blisters were applied. The Salts move him two or three times daily. Appetite moderate.

"Capiat Magnesiæ Sulphatis ℥ii. omni mane et Tæ. Iodini gutt. xii. ter in die ex cyatho vinario aquæ.

"*November* 10*th*. Blisters nearly healed. The knee is no smaller, but says that it is not so painful. Has two motions daily. Pulse 84, small and soft. Sleeps better.

"Capiat Tæ. Iodini gutt. xx. ter in die. Contr. Magnesiæ Sulphas.

"*November* 17*th*. Has less pain in the knee, but it is no smaller. Bowels opened two or three times daily by the Salts.

"Capiat Tæ. Iodini gutt. xxv. ter in die.

"*December* 1*st*. Except one night, has been free from pain in the knee since last report. The knee measures half an inch less than when he came under my care. Bowels open.

"Capiat Tæ. Iodini gutt. xxx. ter in die. Contr. Magnes. Sulph.

"*December* 12*th*. Last week had some slight return of pain in the knee, but it is quite easy now. There is still a little fulness of the knee, which a blister perhaps may assist in dissipating.

"Capiat Tæ. Iodini gutt. xxxv. ter in die. Contr. Magnes. Sulphas. Applr. Emp. Cantharidis genu."

"NOTE.—This boy was not again brought to me, which I thought very strange. On the 6th of October, 1823, I happened to be in the court where his father lives, and called to inquire after the boy, and to ask the reason why they did not continue to bring him to me. The mother of the boy, with a very sorrowful countenance, informed me, that an old woman persuaded her husband and herself to rub the knee with a mixture of oils, which she warranted to cure the disease, but after rubbing the knee with the oils for some time, it became much worse, and the plan was abandoned. Another old woman undertook to cure the disease by poultices of figs, which she extolled as an infallible remedy in White Swelling. Under this treatment the knee enlarged, suppurated, and burst, in three or four places; now there are six openings, discharging more or less matter, and the boy is greatly emaciated, but he is still able to sit and run lace. After being nearly exhausted by the discharge, he was admitted an In-Patient of the General Hospital, under the care of Mr. Attenburrow, and his life was saved by this able and experienced Surgeon performing amputation of the thigh, the 3d of March, 1824. From the progress made towards a cure during the time that the patient continued under my prescription, I have no doubt whatever, that the Iodine would have accomplished a complete cure in this case, if the credulity of the parents had not been imposed upon by the impudent pretensions of the old women."

"Case III.—Mrs. E——, æt. thirty-three, March 9th, 1822. Is of a scrophulous constitution, and had an abscess in the left hip, which was opened about two years since, and still continues to discharge a little thin, and at times, curdy looking matter. She informs me, that the right elbow joint has ached for the last two years; there is a general fulness, swelling, and stiffness of the joint, so that the arm is always bent in a certain degree, and cannot be extended. The skin covering the affected joint is of the natural colour. Says that she has great pain in the elbow when she attempts to lift a heavy body with the right hand. When her arm is suspended in a sling, says that she experiences rather an aching sensation than pain. Bowels sometimes tardy.

"Capiat Pil. Cambogiæ Comp. gr. x. h. s. pro re nata. Sumat Tæ. Iodini gutt. xx. ter in die ex aqua. Applr. Emp. Cantharidis cubito dextro h. s.

"*March 14th.* Blister rose well; the joint is less swelled, and is free from pain. The ulcer in the hip discharges less. Bowels open by the Pills.

"Capiat Tæ. Iodini guttas xxv. ter in die. Contr. Pilæ. Cambogiæ Comp.

"*June 12th.* She informs me, that she has taken thirty-five drops of the Tincture, three times a day, since last report, with advantage. The object of her present visit to me is to know what she is to do with a suppurating gland, about the size of a pullet's egg, on the inner part of the right arm, a little above the brachial extremity of the ulna The joint is less swelled and stiff. The left hip feels almost well, but still discharges a little. Has been in the country the last ten days for change of air.

"Capiat Tæ. Iodini gutt. xxxv. ter in die. Contr. Pil. Cambogiæ Comp."

"This patient did not call upon me again for six months. She derived so much benefit from the Iodine, that after the bursting of the abscess, she could use her arm as well as ever, the joint continues somewhat stiff, and the arm a little bent."

"*Cases of the Morbus Coxarius, or Disease of the Hip Joint, in which Iodine was employed as the chief remedy.*

"Case I.—Henry Houghton, aged two years and a-half. New Radford, March 19th, 1823. The right lower extremity is very much wasted, and is longer than the other. The right hip is considerably larger than the sound one, and he cannot walk a step. Bowels irregular.

"℞ Hydr. Submur. - gr. ii.
Pulv. Jalapæ - - gr. v.

"Misce ft. Pulvis alternis matutinis sumendus. Imponatur Emp. Cantharidis Coxæ affectæ.

"*April 23d.* His bowels are now open. Hip still painful.

"Denuo Imponatur Emp. Cantharidis Coxæ. Capiat Magnes. Sulphatis ʒi. mane. Omittr. Pulvis. Aper. Sumat Tæ. Iodini gutt. v. ter in die.

"*August 9th.* He has not taken the drops regularly, and has not been brought to me for a month. The child's general health is improved, and he can walk when he has something to balance or support him, as a wall.

"Contr. remed.

"℞ Adipis Præp. ℥i. Tæ. Iodini ʒiss. Misce ft. Unguentum quo fricentur partes affectæ mane et hora somni. Repetr. Sulphas Magnesiæ p. r. n.

"*August 21st.* Is better, according to his mother's report, and improves in walking. Has not taken the Tincture of Iodine regularly. Friction with the Iodine Ointment has been regularly employed.

"Sumat Tæ. Iodini gutt. v. ter in die. Contr. Ung. Iodini et alia.

"*September 6th.* Continues to improve. Has more power and feeling in the affected limb. Is desired to walk with crutches.

"Contr. remed.

" *September 9th.* Can walk pretty well with crutches; when he attempts walking without them, he places the right hand on the right thigh of the same side, but he walks very badly. The right extremity is a little longer than the other. He has taken no Iodine for fourteen days. It appears that the child spits out the medicine in spite of his mother. Appetite good.

" Contr. remed."

" Remarks.—This child improved more than could have been expected, considering the irregular way in which he was brought to me, and in which the medicine was taken. It does not appear from my journal, that the child was afterwards brought to me; but the case is interesting, as it shows, that a decided improvement was accomplished, even under the irregular use of the medicine."

" Case II —Elizabeth Richards, aged eight years and a-half, from Poplar Place. General Hospital, May 13th, 1823. Her mother says, that she has been ill for two months, and that she has always been weak in the loins. The left hip is very much larger than the right, and is so painful, that she cannot walk, or even lie upon it. The skin of the hip is of the natural colour. The spine and pelvis are so distorted in a lateral direction, that the left inferior extremity appears to be longer than the right. She is very much reduced in flesh and strength. Bowels generally costive. Stools more offensive than natural.

" Sumat Misturæ Purgantis ℥i. omni mane nisi nimis fusa est alvus. Applr. Emp. Cantharidis Coxæ affectæ h. s.

" *May 14th.* Blister has risen, and remains on. Bowels have been opened by the physic.

" Contr. Mist. Purgans.

" *May 15th* Complains of having a bad taste in her mouth. Stools said to be of a light colour.

" Contr. Mist. Purgans.

" *May 19th.* Feels easier. Blistered part has healed. Is kept in bed. Appetite moderate.

" Contr. Mist. Purg. alternis matutinis. Sumat Tæ. Iodini gutt. viii ter in die ex aqua.

" *May 24th.* Now that she is quiet in bed, she feels very little pain in the left hip. She complains of some pain and swelling in the left knee. The Iodine agrees very well.

" Contr. remed. Applr. Emplast. Cantharidis genu sinistro h. s.

"*May 26th.* The blister has removed the pain in the knee. Is free from pain in the hip.

"Contr. remed.

"*May 28th.* Feels better. Pain and swelling of the knee is gone, and the blister nearly healed. She is tired of being in bed. Let her sit up a little every day. Bowels open.

"Contr. remed.

"*June 2d.* Her general health continues to improve. She cannot use the left lower extremity.

"Imponatur Emp. Cantharidis coxæ sinistræ h. s. Contr. alia.

"*June 12th.* The blister has healed. She complains of pain in the hip when she puts the limb in motion. The hip is not much reduced in size.

"Contr. remed.

"℞ Adipis Præp. ℥i. Tæ. Iodini ʒi. M. ft. Ung. quo fricetur coxa sinistra m. et h. s.

"*June 19th.* She still labours under a considerable degree of pain in the hip, and the swelling is not much reduced.

"Applr. Emp. Cantharidis coxæ affectæ. Fricentur genu et femur Unguento. Contr. alia.

"*June 23d,* 1823. Complains of so much pain in the left inferior extremity, that she can scarcely allow her stocking to be drawn on; the parts are free from swelling or redness. Is a little sick at stomach. Bowels open.

"Omittr. Ta. Iodini. Contr. alia.

"*July 1st.* The hip is less swelled, and she is freer from pain.

"Contr. remed.

"*July 3d.* Hip much easier. No head-ache. Bowels open.

"Capiat Tæ. Iodini gutt. vi. ter in die. Fricr. Coxa sinistra Unguento. Contr. Mist. Purg. p. r. n.

"*July 10th.* No pain whatever in the hip. Walks with crutches. Tumefaction of the hip continues to subside.

"Contr. remed.

"*July 16th.* Improves in walking, and says that she feels better.

"Contr. remed.

"*July 19th.* Experiences no pain when she walks. The hip continues to subside.

"Contr. remed.

"*July 28th.* Walks better. No pain. Swelling continues to diminish.

"Contr. remed.

"*August* 4*th.* Is free from pain, but complains of weakness, and some numbness and coldness in the left lower extremity, from the hip downwards, so that she cannot walk without a pair of crutches. Her general health is not amiss now.

"Contr. remed.

"*August* 6*th.* When I make firm pressure upon the left hip, it occasions some degree of pain. The left hip is very little larger than the right.

"Applr. Emp. Cantharidis coxæ sinistræ h. s. Intermittatur Ung. cum. Ta. Iodini. Contr. alia.

"*August* 9*th.* Feels easier since the blister was applied, and walks better.

"Contr. remed.

"*August* 16*th.* Blister has healed. Hip better.

"Contr. remed.

"℞ Adipis Præp. ℥i. Tæ. Iodini ʒiss. misce ft. Ung. quo fricetur coxa sinistra m. et h. s.

"*August* 26*th.* She is so far recovered, that she has this day been made an Out-Patient of the Hospital.

"Contr. remed.

"*September* 12*th.* Her mother reports, that she is freer from pain, and when she walks, can put her heel to the ground better than she used to do. Says that her daughter's hip 'is more in its place, and smaller.'

"Contr. remed.

"*October* 17*th.* Is better. Drops occasion some head-ache.

"Omittr. Ta. Iodini. Contr. alia.

"In my absence, I find her discharged cured in the journal, but without any date."

Cases illustrating the effects of Iodine in diseases of the Spine:

"Case I.—Miss Anne D——, æt. eleven, Nottingham, September 20th, 1821. Is very tall for her age, and of a spare habit. Countenance pale and sickly. She complains of weakness and pain in the spine, particularly where there is a degree of posterior curvature of two or three of the vertebræ. She labours under great disorder of the stomach and bowels, and I find that her stools are very offensive. She has picked her nose until blood is discharged, and coagulated so as nearly to obstruct the passage of air into the nostrils. The patient is in bed, where she is desired to remain. Her mother is a tall woman, of a spare habit, and delicate constitution, and an elder sister died from Distortion of the Spine some years since.

"℞ Hydrag. Submur. - ℈i.
Pulv. Rhei. - - ℈ii.

"Misce et divide in pulveres vi. Capiat i. ex syrupo alternis noctibus.

"*September 27th.* Has taken the powder with some improvement in the colour and smell of the stools. Pulse 96, and of moderate strength.

"Contr. Pulveres. alter. noct.

"℞ Tæ. Iodini ℥ss. Capiat gutt. vi. ex aquæ cyatho ter in die.

"*September 29th.* She is nearly in the same state as to the spine. Her bowels are in a more regular and settled state.

"Contr. remed.

"*October 1st.* The external nares have nearly healed, and she feels herself much better and stronger.

"Contr. remed.

"*October 4th.* She is so much better, that I find her down stairs this morning. Appetite improved.

"Contr. remed.

"The patient continued the medicines, but did not keep her bed, till the 19th of November following, when she had recovered more than her usual health, and made no complaint of pain or weakness in the spine. I believe she afterwards took only what medicines then remained."

"REMARKS.—I called at her father's the 6th of May, 1825, to inquire after her, that I might report her present state of health. I found her from home; but her mother informed me, that she has continued in good health ever since, and that the back bone has not shown any disposition to grow out since I attended her; she added, that her daughter was soon fatigued with walking, or any considerable exertion."

"CASE II.—Miss Mary C——, æt. fourteen, April 10th, 1822. Is very tall and slender. Complains of weakness in her back, and of some pain when she sits up long, or walks. She points to a small tumour in the lower part of the back, as the site of the pain. I find that the swelling is occasioned by one of the spinous processes in the lower part of the back, projecting beyond the level of the rest; the integuments are a little swollen and puffy, where they cover the tumour. Complains of some pain in the left side of the abdomen. No appetite. Tongue furred and pale. Has a motion only every other day. Has menstruated four or five times in course of the last twelve months. Face very pale.

"℞ Pilæ. Aloes Comp. ʒi. forma in pilulas xii. quarum sumat ii. omni nocte h. s.

"℞ Tæ. Iodini ℥ss. Capiat ægra gutt. xx. bis in die ex aqua.

"*April* 13*th.* Pain in the left side of the abdomen is easier since her bowels have been more open. Vomited her food yesterday. Still complains of pain and weakness in the back. The pills procure two motions daily. Pulse 64, small and soft.

"Contr. Pilul. Aper. Sumat Tæ. Iodini gutt. xx. ter in die. Applr. Emp. Thuris. Compt. dorso.

"*April* 17*th.* She feels better in every respect.

"Contr. remed.

"*April* 20*th.* Had pain in her shoulders and elbows yesterday, but it is less severe to-day. Had a long walk on the 18th instant, from which she felt much fatigued. She lies down oocasionally, as her back aches when she sits up long.

"Contr. remed.

"*May* 5*th.* Feels stronger, and is free from pain in the back, except when she sits up too long. She thinks that the tumour is smaller.

"Contr. Pilulæ. Capiat Tæ. Iodini gutt. xxx. ter in die.

"*May* 13*th.* On removing the plaster, I find the tumour has nearly disappeared, and there is no redness of the skin. Says that she feels stronger and better, and that her appetite improves. Tongue slightly furred. Body open by the pills.

"Contr. remed. Denuo Applr. Emp. Thuris. Comp. dorso.

"*May* 19*th.* Continues to improve, and her back is stronger. Pulse 84. Bowels open by the pills. Menstruates regularly. Is going to a boarding school in the country. I have desired her to take the drops a week longer, and to keep her bowels open by the pills, when necessary."

"NOTE.—This young woman did not again experience any return of the affection of the spine; but some time afterwards she was attacked with symptoms of Phthisis Pulmonalis, and died of that disease.

"CASE III.—John Wapplington, æt. seventeen, lace runner. Was sent by the Overseer of Bilborough parish to the General Hospital, near Nottingham, the 24th of September, 1822. He informs me, that his health has been bad for the last six months. Had an abscess at the back part of the right thigh, a little above the ham, for which he was treated and discharged cured (by Mr. Oldknow, an eminent Surgeon, of this establishment,) after he had remained eight weeks in the Hospital. I had an opportunity of seeing the abscess before his admission into the Hospital, and I am of opinion, that it was of a scrophulous nature. He complains of great weakness, and that he can scarcely walk, owing to want of power in the lower limbs. The lumbar vertebræ are convex on the right side, and concave on the left, forming what is called a lateral curvature, in a considerable degree. The spinous process of the lowest dorsal vertebra projects more than the others. He labours under so much stiffness and pain across the loins, that he cannot support the body long in an erect posture. Is of a spare habit of body. Face pale. Tongue a little furred in the middle. Pulse 108, small and soft. Bowels tardy.

"Sumat Pil. Cambogiæ C. gr. v. omni nocte.

"℞ Tæ. Iodini ℥ss. Capiat gutt. xv. ter in die ex cyatho vinario aquæ.

"*September* 28*th*. Has been in bed the last three days. His back is not so stiff and painful as when admitted. Bowels open by the pills.

"Contr. Pil. Sumat Tæ. Iodini gutt. xx. ter in die.

"*October* 2*d*. Complains of being troubled at times with giddiness. Pulse 88, and soft. Bowels open.

"Intermittr. Tæ. Iodini. Pergat in usu Pil.

"*October* 5*th*. Feels better. Is free from giddiness.

"Capiat Tæ. Iodini gutt. xv. ter in die. Contr. Pilulæ.

"*October* 7*th*. Says that he feels stronger, and has less pain in his back. Appetite good. Sleeps well.

"Contr. remed.

"*October* 14*th*. Continues to recover strength in his back. Appetite good, although he has caught a cold.

"Contr. remed.

"*October* 19*th*. The catarrhal symptoms have nearly left him. Feels better in every respect.

"Contr. remed.

"*October* 23*d*. His general health is better, he gains flesh, and says that he feels much stronger in the loins. Appetite good. Medicines agree.

"Contr. remed.

"*October* 31*st*. Feels better in every way.

"Contr. remed.

"*November 2d.* He is now almost free from pain in the loins.

"Contr. remed.

"*November* 4*th*. Is better, and has scarcely any pain.

"Contr. remed.

"*November* 19*th*. The patient has continued gradually to recover flesh and strength, and he makes no complaint of weakness in the loins, or of want of power in the lower limbs. —Discharged cured."

ART. VI.—*Remarks on Irritative Fever, commonly called the Plymouth Dock-Yard Disease; with Mr. Dryden's detailed account of the Fatal Cases, including that of the lamented Surgeon, Dr. Bell; Dedicated, with permission, to Commissioner Shield.* By JOHN BUTTER, M.D., F.R.S., F.L.S., & W.S. Fellow of the Royal College of Physicians in Edinburgh, and of the Royal College of Surgeons in London; Member of many Medical and Phrenological Societies in London, Edinburgh, Paris, Philadelphia, &c. &c.; President of the Western Medical and Chirurgical Society, and Physician to the Plymouth Eye Infirmary.

To many of the profession, and particularly to the country practitioner, the very title of this book may at first view appear repulsive, as indicating the local character of the disease investigated, and the insolated nature of the pathological observations. He neglects one of the most important sources of improvement, however, who regards as unimportant to himself the strong traits which disease exhibits in its endemic or epidemic character, however improbable it may be, that he shall ever encounter the same form of disease. It is when "pestilence walks abroad," that we become familiar with her aspect. It is then that diseases, which are obscure and equivocal, from imperfect developement, unfold themselves to our view, and suggest general pathological principles, which may influence the treatment of almost every class of diseases.

The Plymouth Dock-yard-disease, therefore, exhibiting, as it does, such striking phenomena, should be studied with attention by every one who would improve himself by the observation and experience of others.

The present book, we apprehend, is one of those which can never become generally known to the public but through the medium of reviews, for although it contains some very important matter, which ought to be known to every member of the profession, yet this bears no proportion to the mass of irrelative comments and unconnected inferences with which it is overwhelmed. The author has so striven to magnify the history of this disease into a volume, that it is no little exercise of patience, even to one accustomed to the task, to cull out that which is useful and important. It is a pearl wrapped in a thousand envelopes, and which would be thrown away by almost any one but a patient reviewer, before half of its covers were stripped off. But to our task—

It appears that there occurred in his majesty's dock-yard at Plymouth, in the summer of 1824, a remarkable epidemic disease, which there and in the adjacent country, excited much apprehension. The labourers constantly employed at this place are about two thousand. Of these fifteen were attacked with a malignant erysipelatous disease, excited by the external injuries to which such persons are constantly liable in their duty. Twelve of them died. It is calculated that in this yard between three and four thousand men wound themselves in the course of the year, but that of these only four hundred are incapacitated for duty, and it is ascertained that for ten years previous only two deaths had occurred from fever, supervening only local injuries.

To exhibit at once, however, the character of this disease, we quote the following cases:

" *Remarks on the Plymouth Dock-yard Disease, &c.*

" Case I.—William Cowle, æt. forty-five, shipwright, St. John-street, Devonport, generally healthy, and temperate in living—of a spare habit, and middling stature.

" 1824. *August* 1*st.* Was laid up from his duty in consequence of a punctured wound, received some days since, in the sole of his left foot from a small nail, which ran through his shoe. The wound is now inflamed and painful. Cataplasms of oatmeal* boiled in water were applied, and the following cathartic pills given:—

" ℞ Ext. Colocynth. comp. gr. viij.
Hydr. submur. gr. iij. Confect. q. s. m.
" Fiat pilulæ duæ.

" 2*d.* Pain increased, and inflammation extending over the arch of the foot; the original puncture being enlarged, gave exit to some pus. Purging mixture taken, agreeably to the subjoined formula:—

" ℞ Infusi Sennæ (*Ph. Lond.*) ℥ij.
Magnesiæ sulphatis ℥i.
Aquæ ℥vi. m. f. mistura,
" Cujus capiat quartam partem, pro re nata.

" 3*d.* In the course of the night, a piece of leather, which had been forced in by the nail, was discharged with the poultice. He now felt easier. Bowels freely opened; tongue clean; pulse about 80, and soft. Cataplasms and cathartic mixture continued.

" 4*th*, 5*th*, and 6*th*. The reports were favourable. Continued his mixture occasionally.

" 7*th*. Considerable fever came on, and inflammation extended up the leg, which is painful. Pulse 100, and easily compressed; much head-ache, nausea, and thirst. He was blooded to 16 ounces. Syncope produced. Cataplasms applied to the foot, and evaporating lotions to the limb. He continued the cathartic mixture.

" 8*th*. Blood buffed, bowels open, head-ache relieved. Bleeding repeated to 10 ounces. Fainting prevented the further loss of blood. Continued the cathartic medicines and topical applications.

" 9*th*. He fainted frequently during the night; pulse quick and feeble; the whole limb much enlarged and erysipelatous. Cataplasms were applied to the foot, and evaporating lotions to the limb. Calomel, antimony, and opium, given with confection in boluses. Cathartic mixture continued.

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* " This form of poultice, or that of bread and water, it should be understood, was generally used for the following patients, when none other is specified.

" 10*th* and 11*th.* Boluses of calomel, opium, and antimony, continued.

" 12*th.* Erysipelas extending up the thigh; great prostration of strength; pulse quick and feeble. Lotions omitted; cataplasms substituted over the whole limb. Fomentations of chamomile flowers and poppy-heads were ordered; bowels kept solvent by an infusion of senna, Epsom salts, and tartarised antimony.

" 13*th.* The whole limb to the groin has gradually and progressively enlarged; its size excessive. Medicines as yesterday.

" 14*th.* Erysipelatous tension and tenderness exist over the abdomen; breathing oppressed; pulse 130, weak and irregular. Opium, camphor, and aromatic confection, ordered in boluses; and spt. ammon. aromatic, with spt. lavand. comp. in mint-water, frequently.

" 15*th.* Singultus; extremities cold; pulse scarcely perceptible; bowels confined. Castor oil and tincture of senna given.

" Two o'clock, P. M. Carbonate of ammonia and wine frequently; blisters to the abdomen; dissolution approaching. Died in the night, perfectly rational nearly to the last. Body not examined."

" Case II.—John Henwood, æt. fifty, house-carpenter, working as a sawyer, and residing at Millbrook, dark complexion, robust, and healthy.

" On the 4th of August, 1824, received a slightly lacerated wound on his right hand by a saw. Cataplasms applied. Cathartic pills and cathartic mixture,* taken immediately.

" 5*th.* Easy.

" 6*th.* Reported unable to attend the surgery, and, on being visited, was found labouring under considerable fever. Pulse about 120, strong and incompressible; severe head-ache and thirst. The whole hand much inflamed. Blooded to 34 ounces; cathartic pills given, and compound powder of jalap. —(*Ph Ed.*)

" 7*th*, 8*th*, and 9*th.* Fever abated, cataplasms continued, and fomentations ordered.

" 10*th.* Continues better, but the whole arm is much swollen and erysipelatous; an obscure fluctuation was perceived on the back of the hand, from which, on being opened, pus could be pressed out as from a sponge. Calomel, opium, and antimonial powder, given with confection in boluses.

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* " The cathartic pills and mixture, directed in the foregoing formulæ, may be considered as those which were generally employed in the Dock-yard, when a difference is not otherwise expressed.

"11*th*. The tumefaction of the hand much reduced. Anodyne bolus continued, and fomentations of poppy-heads and chamomile flowers.

"12*th*. The wound on the hand discharging freely pus and membranous sloughs. The arm very painful; pulse rapid, but soft; tongue clean and moist. Cataplasms, fomentations, and boluses continued.

"13*th*. Made an opening on the fore arm, which discharged a quantity of pus and sloughy matter.

"14*th*. Medicines continued.

"15*th*. Made another opening on the back and inferior part of the humerus, which discharged about eight ounces of pus.

"16*th*. The pain and tumefaction of the arm much reduced; the discharge very free, with quantities of sloughy matter. Bark given, with diluted sulphuric acid.

"17*th*. Fever much abated; supported the arm with a bandage leaving the apertures clear, to which poultices were continued. Wine given; bark, &c. repeated.

"18*th*. Better—matter could be pressed along the humerus, from behind the scapula. The auxillary glands not affected. Cathartic mixture taken occasionally.

"19*th* and 20th. Improving.

"26*th*. The hand and fore arm nearly sound, and the discharge from the humerus much lessened; complains of pain in his left leg and thigh, which are œdematous, but not discoloured.

"*September* 1*st*. The left thigh very painful; body much emaciated; fever increased. Bark omitted; anodyne bolus given at night, and cathartic mixture occasionally; fomentations and soap liniment ordered.

"3*d*. Symptoms as above; pulse about 130, and weak; tongue moist; no appetite. Fomentations continued.

"7*th* to 10*th*. Fluctuation of matter became gradually perceptible in different parts of the left thigh, to which cataplasms were applied. His strength was much exhausted.

"12*th*. The propriety of opening the limb doubted, from his excessive debility.

"15*th*. By Dr. Bell's consent, an incision was made a little above the patella, and another on the posterior part of the thigh, from which was discharged an immense quantity of well-formed pus; he bore the operation well. Wine and opium continued.

" 16*th*. Discharge very profuse; the tension and pain of the limb much relieved.

" 18*th*. Feels more comfortable, but evidently loses ground. Medicines, &c. repeated.

" 20*th*. A slough formed on the lower part of the sacrum, and excoriations in several places over the spine. Cataplasms of yeast were applied.

" 25*th*. A large slough separating from the back part of the thigh. Bark, wine, and opium, continued.

" *October 2d*. Debility so great that it is with much difficulty he can be moved to apply the dressing; gangrene commencing on the right heel. He lingered until the 11th, when he sank one of the most miserable objects ever beheld. Body not examined."

" Case IV.—William Butters, æt. forty, a joiner, and a very healthy man, possessing an excellent constitution, who has been always most temperate in his living, residing in Chapel-street, Stonehouse, with his wife and six children.

" On Tuesday, the 10th of August, 1824, whilst plaining a piece of mahogany in the joiners' shop of his Majesty's Dock-yard at Devonport, he tore up the nail of his right ring finger by a splinter of wood. Dr. Bell removed the nail on his application at the Surgery, and ordered poultices, which were continued to the finger for five days, and afterwards light dressings for three days, he, (Butters) continuing at his work during that time.

" This accident happened the more easily in consequence of the infirm state of the nails of the ring and middle fingers of the right hand, owing to a fracture of the last phalanges, produced by their being jammed between two pieces of timber in February last. He was then confined six weeks by these fractures, but suffered no unusual constitutional irritation.

" On Wednesday morning, 18th of August, whilst dressing himself, he felt shivered and unwell, but nevertheless went to the Dock-yard. Whilst there he became so ill with general disorder, rigors, and faintness, that he was obliged soon to quit the yard previous to the usual hour of departure. He applied to Dr. Bell, who remarked that his illness could not depend on the finger, which, on this day, looked healthy and granulating. Poultices were again applied to the finger, and cathartic medicines ordered.

" 19*th*. His bowels had been freely opened. He was somewhat easier.

" 20*th*. His fever had increased, with severe head-ache.

His hand and arm were now much inflamed; the sore felt cold and smarting, rendering the connexion, which had been before doubtful, between the local injury and the constitutional disturbance, both manifest and certain. V. S. ad ℥xxxiv. Medicam. Cathartic. cum Ant. tart. subinde. Fotus partibus affectis.

"21*st.* The blood, drawn yesterday by Mr. Dryden, buffed; fever not diminished; head-ache unsubdued. His head was now so disordered, that a sort of redness (*Photopsia*) prevailed before his eyes, and a phantom as though a piece of wood was encircled by fire—signs highly indicative of great cerebral excitement. Hand and arm very painful, much swollen, and erysipelatous. The redness appeared in patches and lines on the inner side of the arm in the course of the absorbent vessels, which were red even to the axilla. Great œdema over the whole arm. Admoveantur Hirudines xvi. temporibus.

"Repr. Mistura Cathartica.

"Sumat nocte Bol. sequent.

"℞ Pulv. Antimon. gr. vi.
Ext. Opii gr. ij. Confect. q. s. m.

"22*d.* The leeches afforded relief to his head. Symptoms as yesterday. Continuerentur Cataplasmata et Fotus.

"23*d* and 24*th.* No particular alteration.

"25*th.* The whole hand and arm still erysipelatous, and greatly swollen in an increased degree, pitting like dough on pressure, his pulse rapid and weak; strength greatly exhausted; head-ache rather lessened, but still very bad; tongue moist and clean. On the back of his right hand an obscure fluctuation was now perceptible, which Mr. Dryden opened by an incision nearly two inches in length; the cellular tissue was injected with pus.

"Habeat Ol. Ricini ℥i. statim.

"26*th.* The tension of the whole arm was lessened, and the head-ache relieved, after the opening; the redness disappearing.

"27*th.* Improving. Ol. Ricini ℥i. st.

"28*th*, 29*th*, and 30*th.* Better in every respect. Repr. Oleum. Habeat Mistur. Cathartic. pro re nata.

"*September* 2*d.* Soft dressings and light bandages were reapplied to the finger and arm, in lieu of the poultices, &c. which had been continued up to this period over the whole limb.

"8*th.* Convalescent. Owing, however, to excessive debility, and stiffness of his right hand and arm, Butters could not return to his duty in the Dock-yard until Monday, the 11th of October."

"Case VI.—Gregory Nichols, æt. forty-five, shipwright, a very tall, stout, and athletic man, generally healthy, excepting some nephritic ailments, and a pain in his right side, the result of a blow received from a fall several years ago, of which he occasionally complained. Residence—Pembroke-street, Devonport.

"On the 7th, 8th, and 9th, of September, 1824, he received sundry and slight abrasions over his left shin bone whilst employed as a labourer stowing timber near the Mast and Boat Ponds in his Majesty's naval yard, at Devonport. The weather was very hot and sultry at this time.

"On Saturday, the 11th, he did not work, but went to the Dock-yard to have his leg dressed, and was ordered a cold lotion. He confined himself to his house during the latter part of Saturday and the whole of Sunday.

"On Monday, the 13th, he performed his usual work in the Dock-yard throughout the day, although his leg had become very painful. Whilst at work he was often shivered, a feeling attributed to the cold lotion he had used. At night a pain ensued, and red lines appeared in the thigh, with tenderness in the inguinal glands; he was flushed and feverish, and had pain also in the Occiput.

"14*th*. September, (Tuesday.) Was reported sick, and visited by Dr. Bell, who immediately pronounced on the character of the disease, and ordered cataplasms and fomentations to the leg. Mr. Dryden, who saw Nichols afterwards, directed an emetic, and, after its operation, some cathartic pills and mixture, which also produced the desired effect before morning.

"15*th*. The pain had extended itself from the leg to the groin, hip, and back; the absorbents in their course exhibited a streaky or erythematous redness, which, in the language of the widow, would '*come and go*,' viz. the redness was erratic. There was a particular patch of it in the groin; and there was also considerable Œdema of the whole limb. His fever had increased. Pulse 110, and full. Venæsectio ad ℥xxxiv.

"℞ Hydr. Submur. gr. viij.
Pulv. Antimon. gr. vj.
Confect. q. s. m. f. Bol. No. ij.

"Capt. unum hac nocte et alterum mane.

"16*th*. Fever lessened; the redness of the limb scarcely apparent; the tenderness in the groin nearly gone.

"Sumat Ol. Ricini ℥j. statim.

"*Six o'clock, P. M.* Bowels relieved.—

"Reptr. Bol. anteā prescript.
"Omni sexta quaque hora.

"17*th*. Not worse; bowels open; he was totally incapable of moving the limb, which was raised for him. Cathartic mixture ordered, with tartarised antimony, every fourth hour.

"18*th*. (Saturday.) Passed a restless and a dreadful night; complains of an increased pain in the right hypochondrium: pulse 110, and small. His spirits have never flagged: he is even now confident of his recovery, although his danger is apparent.

"Admoveantur Hirudines 12 lateri dolenti. Repr. Medicam. purgantia.

"*Five o'clock, P. M.* Symptoms increased; there had come on pain and tenderness all over the abdomen with nausea. Venæsectio ad ℥xx. Syncope was produced by the bleeding, and hiccough followed, with occasional fainting. Took castor oil, and had frequent injections during the night. Twenty-four leeches were directed to the abdomen, and an anodyne draught ordered.

"19*th*. (Sunday,) *Seven o'clock, A. M.* Much worse. Leeches could not be applied on account of his restlessness. He had tumbled from one side of the bed to the other, without resting; yet he was rational. Pulse now scarcely perceptible; cold and clammy perspirations had appeared, with nausea, and increased hiccough. The warm bath, and effervescent draughts were ordered, but not used. He died rather before *ten o'clock*, on this morning."

"Sectio Cadaveris.—The body was examined eight hours after death. Emaciation trifling. Parietes covered with fat. Intestines generally inflamed, particularly about the termination of the ileum and the commencement of the cæcum, which were dark in colour. The mesentery and meso-colon were vascular with red patches, the whole being amassed in sero-purulent fluid. The right kidney was completely disorganized, and changed into a mass, like thick cream in colour and consistence. The left kidney sound. The urinary bladder adhered very firmly to the surrounding parts, and contained about six ounces of healthy urine. The other viscera, particularly the liver, were healthy in appearance."

"CASE IX.—Dr. James Bell, æt. fifty-eight, late Surgeon of his Majesty's Dock-yard at Devonport, rather stout, sometimes dyspeptic, but generally healthy.

"On the afternoon of Sunday, the 19th of September, 1824, attended the examination of Gregory Nichols's body,* and scratched his right fore finger, over the extensor tendon on the last phalanx, when he was directing a pupil how to sew up the body, with a surgeon's needle, which had been previously used for that purpose. At this time the Doctor appeared in his usual state of health, and took no particular notice of the puncture or scratch so inflicted on his finger.†

"On the following morning, September 20th, Dr. Bell attended the Surgery at the accustomed hour of nine o'clock, and complained of feeling unwell. When washing his hands he first felt a smarting in the scratch over his right fore finger; whereupon he became shivered, and impressed with an idea that he had caught the disease, then prevailing among the Mechanics of the Dock-yard, which disease had previously agitated his mind, and now made him very apprehensive for his safety. He remained, however, at the office about an hour and a-half, and by that time the rigors and general indisposition had increased in such a degree as to produce considerable alarm. Pulse 96, and full. Bowels open by an aperient, taken on the preceding evening.‡ The wound on the finger was not inflamed. He was recommended to lose blood from the arm, and to take an emetic, to both of which propositions he had a great aversion, and made insuperable objections. He went to bed, however, before twelve o'clock at noon, and endeavoured to make himself sick by irritating the fauces with his fingers, and by drinking warm water. In the course of the day, his fever had increased, and a reaction or flushing followed the rigors. Dr. Dickson, Physician to the Royal Naval Hospital, at Stonehouse, and Dr. Yonge, of Plymouth, were consulted. He now consented to lose about sixteen ounces of blood from the left arm, by a small orifice, and to take the subjoined Bolus:—

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* "See Case VI.

† "It may be here remarked that, in consequence of the unprecedented fatality which had lately occurred, and the untoward character which the wounds generally assumed at this time, he underwent much bodily fatigue, as well as anxiety of mind; and that in crossing the water in a boat on Saturday, to visit a patient at Torpoint, he got thoroughly wetted with rain.

‡ "The Doctor frequently took Pil. Hydr. and Ext. Colocynth. or small doses of Magnes. Sulph. to relieve his dyspeptic complaints.

"℞ Hydr. Submur. gr. v.
Pulv. Ant. gr. iv.
Confect. q. s. M.

which was to be followed by some of the Cathartic mixture in the morning.*

"21*st.* Passed a restless night, with an increase of fever. Pulse 130, and full; stomach very irritable; nausea great; tongue coated; bowels open; complains of pain and tenderness over his right pectoral muscle and shoulder, on which he cannot bear the least pressure; but the wound on the right fore finger is not at all inflamed.

"Repr. V. S. ad ℥xxx.

"Ordered effervescing draughts, with saline medicines, every second hour.

"*Eight o'clock, P. M.* No relief from the second bleeding. The blood was neither buffed nor cupped, the coagulum was rather firm Speaks of a distressing pain about his sacrum and loins, with general lassitude and great weight, and evinces considerable anxiety. There still exists much soreness over the right pectoral muscle; and there is a great prostration of his muscular energies; but withal there is no headache. Pulse 130, and small.

"Reptr. Bolus, et Contr. Haust. effervesc. cum
Potassæ Nitratis gr. v. 3tiis horis.
Illinatur Linimt. Saponis in partes affectas.

"22*d.* Symptoms all aggravated. Passed a sleepless and distressing night, owing to the excruciating pain in his back, but felt relief towards morning, from profuse perspirations. Still feels pain in his right shoulder, with inability to move the arm; complains of indistinct vision, and mistakes the distance when he attempts to take any thing. Nausea continues; pulse 130, and irregular.

"Appr. Empl. Lyttæ Epigastrio
Medicament. Contr.

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* "As the medicines given to Dr. Bell, though judiciously directed, made no effectual check to the march of his disease, it is thought necessary to give a particular account, only so far as seems to be important in detail.

"*23d.* Slept a little during the night; nausea alleviated, but not gone; back-ache mitigated; pulse very irregular, and frequent; articulation difficult; thoughts confused; no pain in any part but the pectoral muscle, when pressed upon; there is no redness nor visible sign of inflammation on the skin; the scratched part of the finger is neither inflamed nor swollen. He took Camphorated Mixture, with the Nitrous Spirit of Æther, every two hours, and Wine frequently.

"Towards evening his breathing became laborious, and delirium appeared.

"Appr. Empl. Lyttæ suris et imo Colli.

"*24th.* Became perfectly insensible during the night; pulse wavering, occasionally indistinct, and imperceptible; breathing laborious; stupor and coma present; the sphincters relaxed, and the discharges passed involuntarily; profuse perspiration towards morning, when the breathing improved. Took four doses of the Sulphate of Quinine (℈i.) without benefit. His deglutition was at last impeded, and a vacant stare occupied his countenance until *seven o'clock on this evening*, when he sunk without a struggle. Body not examined.

"P.S. The Sulphate of Quinine has since been ascertained by Dr. Dickson not to have been genuine."

As we have already had occasion to observe, the remarks made by our author on the above cases, and the pathological inferences which he draws, do not appear to us to be particularly pertinent, interesting, or important.

It appears to us that our author pays too little attention to the consideration of the predisposing cause, and to attribute too much etiological importance to the local injury. If in the space of ten previous years there had occurred among the same number of men, only two cases of fever from wounds, and if during the season of this disease there occurred fifteen cases of a character remarkably uniform, as appears from the above cases, it is absolutely certain that there must have been some cause of a local nature, which operated to create a common predisposition, and which conferred upon the disease its peculiar character.

The local irritation which so uniformly proved the exciting agent in the development of this disease, can be regarded as no more important in generating the disease, than a spark of fire in the explosion of a magazine.

From the circumstance that the disease in question was exhibited by those only who suffered local injuries, and from the fact, too, that those affected by it, remained in perfect or usual health until the wound was received, we have reason to presume that the predisposition was by no means confined to those in whom the disease was thus accidentally developed.

From this, the inference is direct, that there may exist an epidemic predisposition to disease which may pass away without ever becoming developed. Indeed, we have reason to think from these and other facts, that there are certain mysterious causes, which in particular districts, and perhaps over the whole world, are constantly exerting their influence to modify the condition of those vital properties which distinguish the animate from the inanimate creation. Epidemics we know to occasionally extend, with shades of difference, not only over particular districts, and through the human family, but, with shades of difference, to the brute creation, and through every climate.

The above cases also furnish proof of the fact, that the constitutions of different individuals, who are for a long time intimately associated with each other, engaged in the same avocations, and living in the same manner, become, by a mysterious reciprocal influence, attuned to each other, as two pendulums, which vary slightly, when remote from each other, will be made to vibrate in precisely the same time, when suspended near each other, and on the same support.

With regard to the treatment of the disease in question, the reader will probably draw his own inferences from the above cases. The author appears to rely on tonic and invigorating remedies, associated with such topical applications as are calculated to invite the disease to the surface. Among these incisions in the skin were highly important. But we will give our author's general conclusions in his own words:

"I believe, now, that I have enumerated a sufficient number of facts to direct the practitioner to that treatment, which will be found most proper and successful in controlling irritative fever or erysipelas excited by local injuries, either of the simplest kind or aided by a poison. The constitutional treatment will be very much the same, although the local may differ. After the maturest deliberation, which I have given to the subject, I venture, with deference, to offer the following corollaries, hoping that they will be considered as the only explanations which I can advance, respecting the origin. causes, nature, and treatment of this disease:—

"*First*—That the constitutions of these men had been rendered unusually susceptible of irritation at this time.

"*Secondly*—That diet, air, their occupations, and other circumstances, influencing animal health, had collectively operated in creating this morbid propensity.

"*Thirdly*—That the addition of an external injury, to a susceptible habit of body, formed the disease.

"*Fourthly*—That any kind of local excitement sufficed.

"*Fifthly*—That the local injuries would have proved inadequate to the causation of this disease, in persons not predisposed to excitement.

"*Sixthly*—That the disease was not confined to the Artificers of the Royal Naval Yard at Devonport, as erroneously supposed; but was recognized, in detached instances, amongst other people in the neighbourhood.

"*Seventhly*—That the disease was traumatic erysipelas of some, and the irritative inflammation of other authors.

"*Eighthly*—That its leading character was a tendency to spread, to form sloughs, or unhealthy fluids, and to leap from part to part.

"*Ninthly*—That bleeding, and other depletory measures, proved inadequate to the cure of this disease.

"*Tenthly*—That two cases of recovery arose probably from the restoration of healthy secretions, and the third from the removal of tension by incision.

"*Eleventhly*—Experience has shown that the object should be, to invite and keep the disease to the surface by local measures.

"*Twelfthly*—That the general treatment ought to be calculated to invigorate and strengthen the constitution, with the view of expelling the aggressions of disease towards the interior."

It is to be noticed, however, that since the appearance of Dr. Butter's book, we have seen in the London Journal, a statement of the same epidemic wearing a somewhat different aspect, by Mr. Tripe, who appears also to differ in opinion from Mr. B. in relation to the mode of treatment proper to be pursued. Mr. T. warmly advocates the necessity of prompt and copious depletion, and the cases offered by him do indeed substantiate the opinion. It is to be presumed, however, that both of these gentlemen may have been correct, in regard to the particular cases from which they draw their inferences. Undoubtedly there occurred cases, though similar in the leading traits of the disease, yet so different in regard to vascular excitement, as to render both modes of treatment proper in particular cases.

The following conclusions, drawn by Mr. Tripe from the cases furnished by him in the London journal, we transcribe:

"Upon these grounds, I dissent from opinions that have been expressed, and draw the following conclusions:—

"1*st*. The two cases detailed in this paper are genuine specimens of the fatal disease which occurred at Devonport, in the autumn of last year, and which has been commonly called Dock-yard disease.

"2*d*. The symptoms attending the progress and consummation of the disease, together with the dissections, prove that it possessed a tonic and active character; and that its destructive influence was chiefly exerted through the medium of the sanguiferous system.

"3*d*. That all those means comprehended in the general term *antiphlogistic*, reguluted with promptitude and efficiency, proportionate to the activity and intensity of the symptoms, formed the treatment best calculated to relieve.

"It may, however, be objected to these inferences, that the large proportion of deaths, which are exhibited in the history that has been published, furnishes a fact in opposition to them, and proves that a tonic and stimulant plan of treatment should supersede the antiphlogistic. I would answer, that, to support such an opinion, in oposition to the evidence supplied by this paper, it is not sufficient merely to state that twelve men, who died of this disease, had all been bled, and therefore that bleeding must be improper; but it is necessary that the history of each case should be minutely and progressively stated, so as to exhibit the real condition of the patients, linked with the treatment they respectively received. The effect of this would be to prove in what extent the antiphlogistic treatment had been satisfactorily used in all those men who died. It would also afford an opportunity of observing what resemblance (in degree as well as kind) there was between these and the case that is represented to have been cured by the opposite mode of treatment.

" The cases which have been published do not supply this *necessary sort of evidence*, and their brevity is accounted for in the Preface: it is there stated that no notes were originally taken with a view to publication; but that the relatives and friends of the deceased had been called upon to render them as accurate as possible under these circumstances; so that there is not only deficiency of matter in the relation of these cases, but considerable objection to the mode by which it was obtained. These facts deprive them of importance, and must render nugatory any attempt to convert them into a precedent for the establishment of any important point of practice.

" The subject of inquiry is not one of idle curiosity. In all scientific investigations which involve the life or happiness of man, it is essential to ascertain that the general principles which are to influence our future conduct are just and true. In medical reasoning, it does not follow, because a certain practice was unsuccessful, that therefore it was wrong: the result might arise from the ungovernable nature of the malady. The symptoms of high excitement which characterised the cases that I have detailed, from their commencement to their termination,—the evidences of inflammatory action upon the internal structures and surfaces of the body,—speak a language which cannot be misunderstood; and, if bleeding and other antiphlogistic means are not to be pursued under such circumstances, it is most important to determine the line which is to define our practice."

Art. VII.—*Introductory Observations on the general relations of Anatomy and Physiology to the Moral and Physical Sciences, delivered from the Chair of Anatomy in the Jefferson Medical College, Philadelphia, October,* 1825.

Gentlemen,

I have the honour to meet you at this time for the purpose of making a few remarks introductory to a course of Anatomical instruction. I deem it altogether unnecessary to vindicate the relative importance of our subject, by invidiously comparing it with the collateral branches of medical science. At the present day no one is so empyrical as to assert, that a correct knowledge of the structure of the human frame is not necessary to a rational understanding and treatment of its diseases. You are probably already prepared to enter upon the study of Anatomy, I will not say as the most important, but certainly as the fundamental part of medical science.

I might, perhaps, enhance the value which you attach to our subject, by dwelling upon the relations which it bears to Surgery, Pathology, and Therapeutics. This, however, is the business of our whole course, and let our panegyric upon its utility in these respects be the earnestness with which we mutually pursue it. To eulogize a science of which no one thinks lightly, were an easy task, but to exhibit every part of it in such a manner as to excite an interest adequate to its importance, is a duty to which I look forward with some solicitude.

There is one aspect of our subject, however, which, by those who pursue it professionally, is often unobserved. I mean that which it presents to the general scholar, whose comprehensive view embraces the whole circle of the natural and moral sciences, appreciating the symmetry and beauty of each part, in relation to the grand designs of creative wisdom. Such a contemplation of the science, by determining its relative importance, divests the mind of any undue partialities, and prepares us to enter upon our chosen pursuits with liberal views and a just estimate of the labours of others. He, whose partial observation is confined to one department of science, can no more appreciate the harmony which pervades the whole, than the humble artist, who shapes an individual stone, can comprehend the beauty and grandeur of architectural design. The highest end of all science, and the sublimest employment of man, is the contemplation of the wisdom and benevolence of the Creator, so dimly seen through the clouds and darkness which shroud his spiritual existence, as they appear through the lucid veil of the material world. To this end we must look abroad through nature, not only to the range of planets, suns, and systems, but to the revolutions of atoms, and must occasionally call home our excursive thought, to a contemplation of the structure and functions of its own dwelling place.

But this extension of our observation, though amply, is not alone rewarded by intellectual enjoyment. Such is the correspondence and adaptation of one class of scientific principles to another, that analogy is one of the richest sources whence we derive our materials of induction.

To resume our illustration, the artist who contemplates an incomplete specimen of ancient architecture, having determined a part of its outline and general design, is enabled to supply the deficiencies by rules of symmetry and proportion. So the principles which prevail in one department of science, when once determined upon correct logical criteria, suggest, in other sciences, principles exhibiting a general correspondence. The most important innovation which has been made in Physiology is that which resulted from the analogy of physical properties and laws, suggesting corresponding principles as the elements of the functions.

But where shall we locate the science of organization and life, since so much depends upon referring it to its proper place?

The materials of the sciences exhibit themselves to our view in three natural groups. The first consist of those which in *physics* are the subjects of inquiry, the second *physiological*, and the third *moral* phenomena. Matter, life, and mind, are the general subjects which severally occupy these departments. The science of life, then, occupies the intermedium between the physical and moral sciences. It furnishes the middle gradations in the climax of creation, the middle rounds in the ladder, whose base rests on the material world, and whose top reaches to heaven.

The term Physiology, I would so employ, as to embrace, not only the particular subject of our inquiries, but the whole range of animated nature. Let us first notice its relations to the physical sciences, and finally to those which treat of the moral and intellectual principle.

In one sense, the whole material world may be said to possess life. Every species of matter exists in its present state, and exhibits its characteristic properties, by virtue of certain principles, which, from the time of creation, were breathed into its elements. Neither its more gross nor its most sublimated forms, are ever exempt from their controul. Atoms and worlds move alike obedient to their influence. From the sun that wheels in his splendour, to the mote that floats on his beams, there moves not a particle that does not receive its impulse from the same unseen, universal power. Were these principles of physical life for an instant withheld, all nature would revert to its primitive chaos. In the language of poetry, but with philosophic precision, we might predict that

> " Earth would unbalanced from her orbit fly,
> Planets and suns run lawless through the sky,
> The ruling angels from their spheres be hurled,
> Being on being wrecked, and world on world."

The principles of life actuate their material residence only for a time. The contrast which results from their occasional absence, and from the transition of the vital frame to its physical condition, renders the phenomena of animal life appreciable and remarkable. When we see the organs of the human frame at one moment inspired with vitality and intelligence, and at the next dissolving into apparent nothingness, the observation of the most careless is attracted and the dullest mind is prompted to inquiry.

The physical dissolution of matter, however, we can never witness. Though transmigrating from one sensible form to another, and assuming a thousand protean shapes, it is still obedient to some of those immutable laws to which it was subjected at the beginning. Whether it obtrude itself upon our senses in a solid and determinate form, or flow in liquid streams, or evade the sight and touch in its æriform subtilty, it is still either tangible, ponderable, cohesive, or elastic. When once the physical constitution of matter becomes the subject of our inquiries, the mind is naturally prompted to seek for the causes of the phenomena which occur around, and not only to trace the proximate steps in the series, but to investigate the primal or efficient power which gives the impulse transmitted through the whole; and not satisfied with the relation of mere antecedence and consequence, to determine the *essential* relation of cause and effect. These were the objects which the earlier cultivators of science proposed to themselves, and in the accomplishment of them, they aspired to place the human mind in a most exalted relation to the designs of the Creator. By determining the essential and necessary intercourse which exists between events which are in the relation to each other of cause and effect, they expected to elevate us from the humble employment of merely recording and arranging the phenomena of nature, to a participation in the intelligence of the Omniscient Being, who foresees and orders all. The degree of knowledge to which they aspired would, indeed, have enabled them to predict the train of events which should result from every conceivable contingency, and that without the necessity of resorting to experimental observation; thus giving a prophetic, as well as retrospective scrutiny, to our scientific inquiries. To attain to this acme of intelligence, to rear this intellectual Babel, the utmost efforts of the human mind were for centuries exerted. The result was a confusion of speculative systems and a jargon of words. No determinate principles were established, each began, independently, upon his own foundation, and no one continued and completed the labours of another. The time, however, at length arrived, when the genius of one man, by the instrumentality of a single truth, was to overthrow the incongruous monument of mental labour, which had been so long accumulating.

From the creation to the present time, there is but one era in the moral history of man of equal moment with that which is marked by the introduction of the Baconian philosophy. The author of the inductive logic discovered, and clearly demonstrated, that the efforts of the human mind had, till then, been almost entirely lost upon objects which, from their nature, must be for ever unattainable. That the refined speculations in relation to the primal cause and the essential nature of causation, instead of elevating our minds to a conception of the plans of creative wisdom, only degraded the understanding, by conducting it from the sphere which its powers were adapted, and for which they were designed. But this great man was not content with merely dissipating error. He both fixed the fundamental truths from which we are to commence our inquiries, and determined the principles by which they are to be conducted. He so circumscribed and defined the field of philosophic research, as to concentrate our minds upon those subjects alone, which are capable of being penetrated and illuminated. He and his followers have taught, that matter is, from the creation, endued with certain properties or powers, the essential nature of which it is impossible for us to know; that these properties are always exercised in a uniform manner, and that by carefully noting their habits of action, we determine the laws by which their exercise is controuled. Thus, every particle of matter is observed to have a perpetual tendency to fall toward the centre of the earth. By the analytic method of reasoning, as that is called which was formerly employed, philosophers would have sought to develope the essential nature of this phenomenon, the immediate cause which draws the falling body towards the earth's centre, and then to determine, *a priori*, the precise effect which it should produce under every possible circumstance which can influence the condition of matter. It is obvious that this is commencing with general principles, and ending with their application to facts. Newton, however, a disciple worthy of the immortal reformer, guided by inductive principles, from observing the fall of an apple, was led to determine the laws which controul the revolutions of planets, and maintain harmony of systems, and yet was as far from a conception of the real nature of the first impulsive cause as the untutored savage, who looks on the heavens as but a spangled canopy.

This intellectual conquest of worlds was accomplished, not by the rapid advances of the imagination, but by the patient and toilsome accumulation of facts till they became sufficiently numerous to illustrate principles. By observing the different degrees of influence which were exerted upon bodies at different distances from the earth's surface, he ascertained that the attractive power diminished in a uniform ratio, and that it was always inversely as the square of the distance.

From the above observations it is apparent, that the proper object of science is not to prescribe, nor even to anticipate the laws by which Omnipotence is pleased to exercise his power in our presence; but rather carefully to transcribe them from the ample page of nature which is spread before us.

No one who feels an interest in the progress of the human mind, can look back through so many centuries of fruitless research, or contemplate such a waste of genius and intellectual labour, without forming a sublime conception of the moral exaltation to which we should have now attained, had the inductive philosophy been known to the ancients. We are not, however, to regard these principles as the fortuitous discovery of individual genius, for although Bacon anticipated his cotemporaries in relation to them, their revelation was the necessary result of a train of events which began with the beginning of thought. It is impossible that human intellect should have developed these truths at a much earlier period, or if revealed, that they should have been justly appreciated; and equally impossible that they should have remained hidden to a much later time. Progressive series of circumstances had been for a long time converging towards this focus.

The human mind had become wearied with scholastic perplexities, and intuitively convinced of their inutility. Facts had accumulated which could not be forced into an accordance with hypotheses; and the spontaneous synthetic association of these data, had led to conclusions subversive of long acknowledged principles.

The art of printing, had not only contributed greatly to the diffusion of learning, but had combined the efforts of philosophers, and rendered the employment of some uniform mode of ratiocination both desirable and necessary. But far beyond the united influence of all these circumstances, was that of the restoration of the primitive truths of christianity, not only redeeming man from his state of moral depravity, but also contributing to rescue him from intellectual degradation. Together with the sublimest revealed truths, the christian dispensation exhibits a system of ethics, which becomes more perfect the more thoroughly it is investigated, and probably only appears defective, in proportion as it is not understood. As merely a rational system, the christian religion anticipated the advance of human learning, we may at least say, for more than eighteen hundred years. Whatever exercises the human mind in contemplation of truth, qualifies it to recognise the same principle in other departments, however diverse they may at first view appear. Such is the pervasive nature of this attribute of deity, that wherever it has established a radiant point, nothing can insolate its influence. Its light is propagated from one subject of thought to another, till every department of science becomes in some measure assimilated.

Though the limits which I have prescribed to myself will not permit me to dwell upon this interesting subject, I will hazard the assertion that as nearly all which is excellent in morals, so, much that is useful in jurisprudence, in political economy, and I will even say in philosophy generally, emanated directly or indirectly from the Star of Bethlehem. I will not deny, however, that the influence is reciprocal, and that the truths of christianity are elucidated by the truths of nature. The history of eighteen centuries past is replete with facts illustrative of this position.

But if mankind speculated so long unprofitably in relation to the phenomena of material nature, is it to be supposed that the more sublimated principles of life should be developed by their ill directed efforts? In this department of science the order of inquiry was still more remarkably inverted. In the physical sciences numerous facts obtruded themselves upon their notice, and even before the principles controuling their employment were deduced, they had acquired an influence of which the mind was unconscious. The more hypotheses were extended and applied to particulars, the more opposed they became to the evidence of the senses. In the science of life, however, there was not that opportunity for the exposition of error. Facts were less obvious, and the acquisition of them required a degree of zeal and perseverance, which nothing but a just appreciation of their importance could prompt and maintain. The obvious phenomena of life, they sought to bring under the same general principles, to the length and breadth of which, the physical sciences had been reduced. The opinions which resulted were so far, even from rational conjecture, as to appear, at this time, ridiculous and contemptible, and altogether unworthy of the human understanding. The slow progress which was made by the ancients in the acquisition of anatomical facts, even after the healing art had become a distinct object of pursuit, is truly astonishing. The anatomy of Hippocrates was almost confined to the bones. From his time, centuries elapsed before any adequate knowledge was acquired, even in relation to those structures which are easily demonstrable. Scarcely any thing was known of the general structure of the brain and nerves, till the time of Herophilus and Erasistratus, of the school of Alexandria. A knowledge of the structure and relations of the muscular system was of still later acquisition. In regard to the organization of the heart and blood-vessels, the observation of two thousand years had not accumulated data sufficient to demonstrate what to us appears almost self-evident. We can never cease to wonder that the circulation of the blood, a fundamental circumstance in all our physiological inquiries, should have eluded observation, till demonstrated by Harvey, about two hundred years since. It is a familiar fact that the ancients, in theory, resolved all material objects into four elements, fire, air, earth and water. From the various modifications and combinations of these, they supposed every phenomenon to result. The same principle, or something corresponding to it, was employed in their speculations concerning life. The organized frame they regarded as constituted of earth and water, pervaded by a peculiar air or spirit, and warmed and animated by a modification of fire.

In the opinion of the earlier anatomists, the brain itself was a mere mass of earth and water, acted upon by an ethereal fire, of the same nature as the elements of the stars, which resided in the left ventricle of the heart, and which was prevented from consuming at once its own habitation, by the constant inhalation of air by the lungs. The pulsation of the arteries they attributed to the motive principle of the air or spirit which they were supposed to contain. The blood, they imagined to be confined to the veins and the right side of the heart, flowing from the latter receptacle during the day, and returning to it at night.—The opinions of the ancients in relation to organization and life, are well illustrated in the story of Prometheus, who, having made an image of the human frame from clay, presumptuously stole fire from heaven to kindle into life the work of his hands. That a sublimated and ethereal heat should be supposed the ultimate principle of life, is not surprising, since warmth being always present in most living beings, and regarded as the unequivocal evidence of life, comes to be unconsciously associated and almost identified with it. This idea which, however, must be rejected from science, furnishes the imagination with a metaphor which is appropriate and expressive; "the lamp of life," "the vital spark," are expressions with which we often meet. In the language of poetry the figure is particularly beautiful.

Othello, when about to commit the last act of cruel jealousy, is very naturally made thus to personify the light, which shone on the beautiful face of Desdemona. "If I quench thee, thou flaming minister, I can again thy former light restore; but once put out thine, thou cunning'st pattern of excelling nature, I know not where is the Promethean heat that can thy life relume."

As anatomists became more acquainted with the complicated mechanism of the human frame, and witnessed the wonderful harmony which associates the different parts, this primitive idea of life became obviously inadequate. The precision with which each organ is observed to discharge its office in relation to the whole; the promptitude with which the powers of life rally to repulse the encroachments of disease, as if anticipating injury; the manner in which the defect resulting from the interruption of one function is obviated by the substitution of another, as if by provident design; suggested the belief that life is an intelligent, and spiritual principle, infused into the system, and which, with an unwearied circumspection, surveys and controuls the whole vital apparatus.

This idea of life, although at first ridiculous by being associated with the wild speculations of the earlier anatomists, became a more rational assumption, when qualified by an extensive knowledge of the functions, and finally a sacred article of belief, when associated with the truths of revealed religion. The Phusis of Hippocrates, the Archeus of Van Helmont, the Anima of Stahl, the Vis Medicatrix Naturæ of later writers, and the vital principle of the present day, are essentially the same.

Let it not be supposed, from what I am about to advance, that I would array the deductions of science against the revealed principles of christianity. Truth can never be divided against itself,—but whether written in the book of nature, communicated by inspiration, or uttered in thunders from Sinai, it is the same immutable principle.—Revelation was never intended directly to facilitate the acquisition of those scientific truths which are within the reach of our natural powers; but rather to unfold to us the otherwise inconceivable relation existing between God and man. In displaying the moral condition of man, however, it was impossible not to make use of the language and ideas, which then obtained, in relation to such material objects as are the subjects of scientific inquiry. It was impossible that any abstract and peculiar language should have been, at once, employed in illustration of the divine truths. It was only by the metaphorical use of words, in which men at that time were accustomed to think, that any intelligible communication could be made. Had inspiration anticipated the progress of the sciences, and instead of employing illustrations which were conformable to the degree of knowledge then prevailing, had alluded to truths which the human mind has since arrived at, the whole would have been unintelligible. Had the language employed been literally and scientifically true, the divine mission could never have accomplished its end, without working greater miracles in the human understanding than were wrought in material nature. The language employed in the scriptures, therefore, in relation to matters of science, is only to be regarded as a necessary conformity to the state of human learning at that time, and should by no means be opposed to the progress of philosophic inquiry. Those of its friends, who have extended its signification beyond the limits which contemporary circumstances assign to it, have perhaps prejudiced the cause of religion more than those who have avowed their hostility to its principles. By assuming grounds which the progress of science has compelled them to abandon, they have given their opponents occasion for exultation, and favoured the belief that the citadel itself is but an illusion which must be dissipated by the increasing light of natural truth. It is undoubtedly in a degree from this mistaken zeal, on the part of the friends of revealed truth, that the pursuits of science so often and so unnecessarily lead to scepticism.

Our investigations in relation to organization and life can never interfere with the fundamental principles of christian faith, while we admit the existence of an immaterial, intellectual principle, which survives the dissolution of matter, the decomposition of the human frame, and I will even say, the extinction of life itself.

In the common acceptation, life belongs to all those substances which are organized. Such as are exclusively under the controul of the *physical laws,* of which I have spoken, are *homogeneous* in their structure, every component particle being perfect in itself; thus a piece of marble exhibits the same properties, whether it be in one mass, or reduced to atoms. Organized beings, however, are composed of dissimilar parts, all of which conspire to perform certain offices essential to the existence of the individual to which they belong.

Thus an animal is composed of bones, muscles, nerves, the organs of sense, &c. the existence of each of which is dependant upon the integrity of all the others. Unorganized bodies increase by the addition to their external surface of similar particles. They do not therefore grow, but may be said to accumulate. Organized beings, on the other hand, perform an active and interesting part, in relation to their own structure, for they possess an apparatus which elects the proper materials from surrounding substances, and converts them into the different component textures. This process is denominated assimilation.

I have already spoken of the properties and laws which controul inanimate matter. Haller was the first who suggested the existence of corresponding properties as the elements of life. Him we are to regard as the great author of physiological induction. Bichat improved upon the suggestions of Haller. He taught that, to the physical properties, which belong to the organs of animals, as for instance, the resistance of the bones, the tenacity and flexibility of the ligaments, the elasticity of the cartilages, &c. so necessary to the mechanism of the human frame, there are superadded certain other peculiar properties, which bear the same relation to the phenomena of life, that the former do to those of inanimate matter. These properties are *sensibility* and *contractility*, to some modification or combination of which, all the results which the vital organs exhibit, may be referred as their ultimate cause. The essential nature of these principles is beyond the reach of our faculties, and hence, though we resolve life into elementary principles, our conception of the agency of the great first cause is, by this, no way degraded. The vital properties exist in their simplest form in the vegetable kingdom, the individuals of which exhibit no other functions but such as are immediately concerned in the organization and growth of their own structure. Thus a plant lives within itself and enjoys no perception of surrounding objects. As we ascend the scale of beings, however, we observe life to consist in a more exalted class of phenomena. In the animal system it controuls not only the internal operations, but, through organs adapted to this end, establishes a most interesting relation with surrounding objects. By means of the locomotive powers, and the organs of the senses, animals move from place to place, take cognizance of whatever influences their condition, and seek or shun it, as it gives pleasure or pain. In the human frame, thus organized and qualified for its reception by the vital properties, the rational and moral principle assumes its temporary abode. I am aware that it is thought necessary, particularly by those who advocate the immateriality of the soul from the light of nature, to identify life with the immortal principle. The ingenuous arguments of bishop Butler, however, answer the objections which may be raised against the immortality of man's sovereign reason, no more conclusively than they do those which may be urged against the perpetual existence of the humblest plant. The occasion will not permit me to dilate upon this subject, but does not the analogy of material nature which I have already adduced, rather suggest that the vital condition of matter is dependant on certain properties with which it is endued, and that life is the manifestation of the phenomena which result from them? Let every one scrutinize the operations of his own mind, in relation to his conception of life, and he will find it impossible to think of it, but as associated with organization. Of the property of gravitation we can only conceive as belonging to matter; and if life be abstracted from organization, who can conceive of its existence?

Of a moral and intellectual principle, however, we can conceive as being independent of a material basis. It is not manifested to us through the medium of organs alone; the mind's eye is turned inwards upon itself, and its operations are the subjects of consciousness and reflection. It is only, however, through a living and organized being that the mind can hold intercourse with material objects. Life, then, is the tie which binds together the spiritual and the material world; the principle which qualifies matter to become the residence of the soul. Through the organs of sense, as through obscured windows, the imprisoned spirit takes a limited survey of surrounding objects. How sublime is the idea, how exalting the hope that, when the mind has cast off its material impediments, we shall contemplate with a direct and intense perception, the benevolence, the wisdom and the power of the Creator, as displayed throughout the universe. In the language of a familiar author:

> "Life makes the soul dependant on the dust,
> Death gives her wings, to mount above the spheres,
> Through chinks, styled organs, dim life peeps at light,
> Death bursts the involving cloud, and all is day."

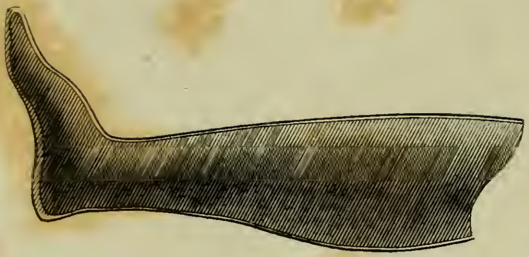
Art. VIII.—*Observations on Fractures of the Leg, with an account of a new Support.* By Nathan Smith, M. D. &c.

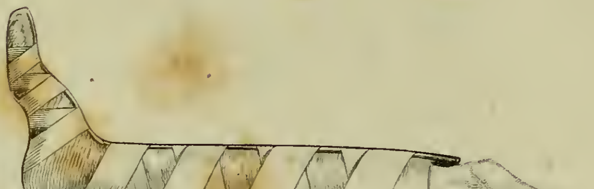
The support for a fractured leg, consists of one piece. It may be made of almost any kind of wood, but bass-wood, or white pine, is the best. One piece of sufficient size is better, but if one of sufficient thickness cannot be conveniently procured, two slips of plank, each two inches in thickness, may be glued together, and then worked into the proper shape. The support should be excavated by the tool in such a form as to receive one-half of the leg, and the upper surface of the support should be adapted to the lower half, so as to divide the pressure as equally as possible over the whole lower surface of the limb. The only covering for the support, or that which intervenes between the leg and the support, should be a piece of flannel, and there should never, in case of fractured limb, intervene any kind of bandage between the support and the limb, as such bandaging can never be useful, but may be, and often is, very injurious. In case of simple fracture of the leg, the support should be applied to the out-side of the limb, as that is the most convenient for the patient; but in case of compound fracture, and where the wound happens to be on the outside of the limb, the support should be applied to the inside of the leg, and the patient may lie on his side, or on his back, or he may change from one position to another, which is always a relief; or he may lay it on the outside, as the support will preserve it in its proper situation, though it should be on the upper side, provided the limb be placed on an even pillow.

As there is no occasion for hurry in applying the support, it being equally well for the patient, were it applied the day after the injury, as immediately, the surgeon may take an exact measurement of the limb, and thus the support be made to fit accurately.

The surgeon, in the mean time, should straighten the limb, and lay it on the surface of the bed or pillow, to rest until he is ready to apply his dressings. When every thing is prepared, the limb is to be taken up by two persons, one at the knee, and the other at the foot, who should raise it from the bed, and extend the limb, keeping the knee bent, while the surgeon adjusts the fractured bone. The limb should then be placed in the support, and as the support invests the leg, and confines the foot, the surgeon may embrace with his hands and support the ancle, while an assistant makes counter-extension by the knee; he will thus extend the limb, while a third person binds it to the support, by strips of flannel, after the manner of the common tailed-bandage, as it is termed. This being done, the limb may be laid in the bed, with the leg flexed upon the thigh, and if the support be well adapted to the shape of the limb, it will not produce any uneasiness from pressure. But as the support may not fit the limb exactly, and as it may happen that the limb may swell, and make the bandages which bind the support to the limb too tight, they should be examined each day successively for the first two or three days, in order to rectify or remove any thing wrong in the dressings.

This method of treating a fractured leg has several advantages over any method which I have seen recommended. In the first place, by drawing a single pin, we may turn off the bandage, examine the limb, and make any application to it, or dress a wound, without deranging the bone in the least, or giving any pain to the patient. The bandage being applied over the support which covers one-half the limb, it cannot produce injurious pressure, or obstruct the circulation. The patient may bend or extend the limb at pleasure, be





helped, or help himself out of the bed, and set in a chair, without injury or producing pain, which is a very great convenience. Confinement on the back, twenty or thirty days, is no small suffering.

There have been several attempts, by ingenious contrivances to apply permanent extension to a fractured leg, but so far as I have witnessed their effects, they have been uniformly bad. In some cases, they have produced the very effects which they were intended to obviate; and in every instance, have been a source of pain, irritation and unnecessary confinement.

I believe that permanent extension is never necessary in fracture of the leg. I have used the support recommended above, more than twenty years, during which time, I have attended many cases of fractured leg; and though I have never tried means to produce permanent extension, I have never had but one leg shortened in the least, and that, though a compound fracture was not shortened half an inch, and the shape of the limb was quite perfect.

I have stated above, that there should be no bandage between the limb and the support. This practice, I apprehend, has done more harm than surgeons are aware. Every surgeon of fifty years of age, must recollect with what alarm a compound fracture was formerly viewed by the surgeon: and both the surgeon and the patient often realised all the suffering which was predicted. As I have had many cases of compound fracture, since I discontinued the use of constrictive bandages, and as I have never had more trouble with them, than what would arise from a simple wound, added to a fracture, (that is, the mere inconvenience of dressing the wound,) I have thought that the bandages, and short or long splints applied in such cases produced all the mischief.

There is another work of supererogation, in cases of fracture, which is still continued in this country, and which is, as I believe, productive of much mischief—that is, the use of what may be called the counter-splint. This is applied to keep the ends of the fractured bone on a level with each other. A little reflection, will, I think, convince any one, that they can have no such effect. So long as the limb is supported on one side, and carefully bandaged to the support, in such manner, as that the limb shall lie on the support on one side and be embraced by the bandage on the other; the bone will be kept in its place with more certainty, than it could be by the counter-splints, which, like the bandaging, can effect nothing but injurious pressure.

There is yet another advantage claimed by this apparatus, over those generally used, viz. that the limb may be flexed or extended, at the pleasure of the patient, which affords great relief; as one position continued for a length of time, will ivariably give considerable uneasiness, whatever the position may be: there is no position, however so painful, as perfect extension or a great degree of flexion.

ART. IX.—*Case of Diseased Spleen, communicated in a Letter to one of the Editors.* By DR. D. E. DEMING, of Hinesburg, Vermont.

THE following case, which was communicated in a letter to one of the editors, by a respectable and intelligent gentleman, we do not insert as exhibiting any thing unique in regard to the morbid phenomena, or the magnitude of the diseased viscus, although indeed it is one of the most reremarkable in this respect on record. Morgagni relates a case in which the weight of the diseased spleen was eight and a-half pounds, and other authors speak of them still larger. The circumstance which confers value upon the case, is the intelligent account which is given of the pathological associations which the disease exhibited. The pathology of the spleen as well as its physiology, is perhaps less known than that of any other viscus, and it is only by a careful and minute attention to all the accompaning symptoms that we can hope to establish any thing determinate in regard to it. The craving and unsatisfied appetite of the patient in the present case, would indicate the necessity of the spleen as subservient to digestion. Our readers, however, will draw their own inferences.—EDITOR.

DEAR SIR,

THE following is a history of a case of enlarged spleen, and of the patient's early life, as nearly as can be ascertained, which is submitted for your disposal.

Mrs. Clark was born of healthy parents, free from hereditary disease, and from infancy to the age of sixteen, she was healthy and active. About this time she was violently attacked with bilious cholic, which reduced her extremely low, and her health was ever after precarious, she being subject to periodical head-ache and cough. At the age of twenty she subjected herself to a sedentary life—it proving detrimental to her health she relinquished it at the age of twenty-three, at which time she was married. The menses were profuse from their commencement until within six or eight months of her death; sometimes increasing to menorrhagia and always attended with pain. She was tall, slender and emaciated. During the winter of eighteen hundred and twenty-two, she became unusually ill—her symptoms indicating an approach of phthisis pulmonalis. Epispastics, expectorants, and other remedies were resorted to, which abated the violence of the complaint. About this time she discovered a tumour in the left hypocondrium of the size of a walnut. Several months after this she became alarmed at its rapid growth, and made her case known. Dr. Goodyear for the first time was called in, and from him I have obtained the history of her condition at that time. Says the Doctor, "on examination I found a tumour nearly of the size of a child's head, moveable and distinct from the surrounding viscera, somewhat oblong, with a smooth and uniform surface except on the anterior part, which was uneven and indented,—without pain or tenderness. Her appetite was good, and she could employ herself about light work through the day. Pulse from eighty to eighty-five, round and thrilling, with a peculiar protraction of the systole of the heart." There followed as the disease advanced, palpitation of the heart, lassitude, fatigue on the most trifling exercise, debility, emaciation, &c. The secretion of urine was much increased; through the day, however, she evacuated but little, in consequence of which the abdomen became much distended in the evening, which rendered respiration quite laborious, but a collapse always took place before morning by means of frequent discharges of large quantities of urine during the night. Her thirst for water, acids, tea, &c. was insatiable. She was in the habitual use of opium to procure sleep and rest, which at times produced nausea. Medicine produced no apparent effects. Digitalis and ammoniated tincture of guac. for a time were freely taken, and a few other medicines were tried, but all proved useless. Opium was the only remedy from which she found any relief. The digestive functions remained unimpaired, the bowels were sufficiently active, and the stools appeared healthy. Her appetite for solid food became rapacious—but food satisfied no longer than she was receiving it, probably in a very great measure on account of a kind of faintness, which for the most part of the time she experienced. The rapid growth of the tumour, the peculiar sensation it imparted to the touch, the size of it in the commencement, and the symptoms generally, which were so different from what is common in cases of diseased spleen, rendered it very difficult even to conjecture its local condition, or of what composed. A number of physicians were consulted—some supposed the tumour to be situated in the cellular substance of the abdomen, external to the peritoneum—others, that it was an extra-uterine conception, and others that it was a sarcomatous substance, situated in the cavity of the abdomen, but involving no important viscera—consequently no regular course of treatment was adopted in her case.—The enlargement of the abdomen and some peculiar longings were symptoms, very much resembling the last stages of pregnancy, and she with many of her friends for a time indulged the hope that she was pregnant. But as her complaint continued to advance, and as every effort for relief proved ineffectual, she became more and more anxious—her mind was continually in search of new and untried remedies which were no sooner tried than abandoned. In this condition of anxiety and disappointment, the unhappy sufferer passed between two and three years. Six or eight months previous to her decease she ceased to menstruate, after which her decline became more rapid. In the last stage of her disease she had several attacks of acute pain in the right hypochondrium, which usually came on suddenly while evacuating urine, and gradually subsided. The pulse became quick and feeble, with œdmatous extremities, and difficult breathing, from which she obtained the most relief by riding in a carriage—at length she found no relief except in an erect posture in a current of fresh air. In this most distressing condition she remained but a short time and expired 12th June, 1824, thirty-one years of age. On making an incision longitudinally, and another transversely through the peritoneum, a small quantity of serous fluid was discharged, and the spleen was presented to view, occupying the whole of the left hypochondriac region of the upper and anterior part of the right and the left lateral and anterior portions of the umbilical, lumbar and hypogastric regions.—The superior extremity lying closely in contact with the liver, and diaphragm was somewhat pointed, and fimbriated, and the great pressure it produced upon the diaphragm and lungs, was the probable cause of the difficulty in respiration.—The inferior extremity being less compressed, was more massy, and terminated more abruptly. Its colour was rather darker than natural, the surface was of a polished smooth structure, except where the blood-vessels entered, and on that portion of the superior extremity which was firmly attached to the diaphragm and linings of the ribs by membranous adhesions—The splemic artery and veins were in size little inferior to the aorta and vena cava—the branches of the vena porta on the left side were also very considerably enlarged. It was fourteen inches in length, eight in width, six in thickness, and its weight eight pounds and seven ounces—its whole structure appeared to be slightly indurated.

The left lobe of the liver exhibited marks of chronic inflammation. It was enlarged and so firmly adherent to the side, that it was much lacerated in detaching it.—The weight of this viscus was seven pounds and six ounces—the other abdominal viscera appeared healthy. The thorax was not opened. It may be proper to remark that the patient had had no children. She was never attacked with intermittent nor with remittent, neither did she ever experience any pain or tenderness to the touch, especially in the left side—the tumour never gave any uneasiness except to the mind, and from its bulk, pressing upon the lungs—the patient could rest with equal ease on either side.

Art. X.—*Case of Fracture of the Os Femoris, with a Wound of the Popliteal Artery, followed by Gangrene of the Leg, which rendered Amputation of the Thigh necessary for the preservation of Life. Communicated in a Letter to one of the Editors.* By Samuel C. Gwinner, M. D. of Easton, Pennsylvania.

On the first of November of the present year, A. V——, aged about thirty-five years, whilst assisting in putting a hogshead of cyder on a wagon, received a severe blow on the left thigh from the falling of the hogshead, which produced a fracture of that bone at its lower part. A messenger was immediately sent for the family physician; in the mean time the man was conveyed home the distance of about a mile. On arrival of the physician in about an hour after the accident, the thigh on examination was found to be enormously swelled and tense; a wound was discovered an inch or more in length, penetrating through the skin and cellular membrane only, at the lower and outer part of the limb. No crepitus could be heard, but the deformity at this part, together with the shortening of the thigh, plainly indicated the existence of a fracture.

The pain was excessive, which was referred by the patient to the foot and ancle, more particularly, accompanied with symptoms of faintness or exhaustion. The limb was immediately placed in the long splints of Desault, and sufficient extension and counter-extension made merely to support it, and counteract the involuntary twitchings of the muscles. An evaporating lotion was also used to the thigh.

Whilst applying the apparatus it was ascertained that the foot and lower part of the leg were unusually cold and void of all sensibility to the touch, which attracted more particular attention in a day or two after. These symptoms, however, did not excite much alarm in the mind of the medical attendant at the time, as he imagined they were caused by the pressure of extravasated blood obstructing the free circulation through the femoral artery—that the want of sensibility was owing to the same cause, viz. pressure on the nerves; the extravasated blood he supposed came from the division of a number of branches of the femoral profunda, &c.

The above symptoms continued till the eighth day with little variation, except that the tumefaction of the thigh had somewhat lessened, with a diminution of pain; the foot and ancle remained the same. Thus far the particulars of the case were related to me by the attending physician. Being in the neighbourhood, I was now requested to visit the patient. The coldness and want of sensibility continuing, with a slight purplish appearance on the extremities of the toes, and vesication on the outer part of the leg, just above the ancle, too plainly indicating that gangrene was about to commence. I gave it as my decided opinion that the main artery was injured at the time of the accident; indeed the sudden and enormous swelling of the limb, together with the symptoms already mentioned, satisfied me that they could proceed from no other cause. I had little difficulty in convincing my colleague as to the probability of the fact. He now became extremely anxious about the welfare of his patient, as he clearly saw the dangerous situation in which he was placed. He invited several of the most respectable practitioners in the neighbourhood to see him, to devise the best means for his ultimate good.

On the 14th, a consultation was held; from the 8th to this day, the gangrene had gradually and slowly increased, but had not extended beyond the cold and insensible parts, on which, however, several other vesications appeared. The toes had become of a darker colour, the skin covering them was shrivelled and dry, and detached from the parts beneath. There was a unanimity of opinion as to the probability of the main artery being wounded, and the necessity of an operation. In consequence, however, of his general health being as yet undisturbed, it was determined to do nothing for the present, in the hope that the tumefaction of the thigh would continue to abate (as it had diminished very considerably for the last four or five days) and thereby render amputation more easy and successful. The patient was apprised of his critical situation; he calmly and deliberately replied that he had made up his mind to submit to the operation, provided it became necessary for the preservation of life.

It was agreed that we would meet again on the 17th; in the meanwhile the patient was to be very closely watched, and in case the mortification should be disposed to spread rapidly, or his constitution suffer, the operation should be performed as soon as circumstances would admit. On the 15th he experienced considerable pain in the leg, accompanied with febrile symptoms, and continued during the day, but left him sometime in the night. In the evening of the 16th I visited him, and found him almost free from pain. The gangrene, however, had made considerable progress, having nearly reached as far as the knee. The toes have become almost black, and the leg has a livid and mottled appearance. Heretofore he has suffered but little constitutional disturbance; the pulse has now become more quick and frequent; skin is hot and dry, with restlessness and anxiety; he complains of no pain at the seat of fracture, the swelling of the thigh has diminished a good deal since the 14th. He was seen this day by the attending physician, who directed for him the Dovers powder to be taken at bedtime to procure sleep.

According to agreement, the consultants met again on the 17th, at ten o'clock in the morning. The patient has been very restless during the night, having obtained little or no sleep; the irritability of the system increases; the pulse has risen to one hundred and twenty per minute; complains of being weaker than usual; his appetite has failed him, and he is evidently sinking; gangrene still progressing. The patient having made up his mind to submit, the thigh was amputated without delay. He bore the operation remarkably well, but was a good deal exhausted. As was anticipated, we found the muscles much bruised, swollen and discoloured, so as to excite apprehension respecting his ultimate recovery. After giving the necessary instructions to the attendants, we left him, with the promise that one of the medical gentlemen would return and remain with him that night. On the 18th report states that the patient had a very restless night, talked almost incessantly, accompanied with frequent startings, which symptoms were attributed to the large opiate given him before the operation. Towards morning he became composed, and continued so during the day; took some nourishment; the stump is free from pain.

19th. Continues to improve; slept well last night, and is better in all respects.

On the 20th the stump was opened, owing to the profuse discharge of a thin serous fluid, which came through the dressings, rendering them quite stiff and unpleasant, and somewhat offensive to the patient. The lips of the flap were in contact, and had a good appearance; but as yet no union had taken place; there was some healthy looking pus on the dressings; in fact, the wound looked much better than was anticipated;

the swelling of the thigh has also diminished very much; his appetite still improves, and the case is flattering beyond all expectation. On the following day I left the neighbourhood, and have not since heard from the patient.

Appearances on Dissection.—The popliteal artery was wounded by the extremity of the fractured bone, immediately after it perforates the triceps magnus to enter the ham. The orifice was small, and had communicated with a sac about the size of a goose egg, but now closed by a coagulum of blood which had formed in the artery more than an inch in length, opposite the wound, by this means intercepting completely the circulation through the sac and limb below, accounting in a most satisfactory manner for the cause of gangrene. The artery at this part was much thickened, and contracted to one-half its natural size; its inner coat was shrivelled or corrugated where the coagulum was situated. The blood in the sac was almost as black as ink, and completely dissolved; that in the venæ comites of the leg was similar in appearance; they were enlarged much beyond their natural size, and quite distended. The muscles of the leg had already assumed a livid or purplish hue, and no doubt in a very short time the whole limb below the wounded vessel would have been entirely deprived of vitality. That there was a partial circulation through the leg is evident, from the slowness of the mortification; but it was chiefly through the deep seated vessels, inasmuch as the cutaneous veins had entirely collapsed, and could never be seen.

I have endeavoured to give you a plain statement of the facts of this interesting case, as they presented themselves to my notice. I am afraid I have already tired your patience by details which may be considered unnecessarily minute. I trust, however, that the novelty of the case, and the many important circumstances it embraces, in a practical point of view, will be deemed a sufficient apology. I therefore send it to you without further comment.

Art. XI.—*Case of Spontaneous Dislocation of the Shoulder Joint. Communicated in a Letter to one of the Editors.* By Dudley Atkins, M. D. of Kingston, Luzerne County.

About the middle of August, 1824, a lad, thirteen years of age, was brought to me, of whom the following account was given by his father, a very respectable farmer. His son was seized about the middle of July with chills, followed by a high fever, and not long after complained of pain in his left shoulder and arm, which gradually became very hot, red, swoln and painful. As the boy had been harrowing the day he was taken sick, and was conscious of no fall, blow, injury, or other cause, which could account for this affection of his shoulder, the gentleman in attendance naturally supposed that the *cold, fever, or inflammation*, or all together, had fixed themselves in this point. Bleeding, purging, and all the usual general and local antiphlogistic remedies were applied, and he recovered so much strength as to bear moving. In five or six weeks after the first occurrence of disease, he was brought to me; when he exihibited the following appearances. His countenance was pale, and his look precisely that of a child labouring under some scrophulus or other chronic inflammation. I found the shoulder so swoln, that, although he said it was diminished one half, I could learn absolutely nothing as to the state of the joint, but that it was immoveable. The tumour was uniform, hard, pale, and covered with numerous blue veins, seen clearly through the skin, and he complained of pain in the whole arm and shoulder. The arm was much swoln, and on the outside, about three inches from the elbow, was a spot which was red and soft, precisely like the pointing of a deep seated abscess. The father and boy both agreed that the appearance of this spot had immediately followed a long and painful squeeze from the thumb of a practitioner. Upon plunging the lancet into this spot, nothing but a small quantity of pure arterial blood came from the orifice, which relieved somewhat the swelling and pain. I then directed such remedies as were likely to remove the tumour about the joint, and desired to see him again in a few weeks. At his next visit he informed me that during the night after I saw him first, a discharge took place, from the orifice which I made, of at least a gill of matter, which still continued to be discharged when I saw him. Seeing nothing in the case at present but the consequences of a common abscess, I directed the continuance of the same remedies with some bark, wine, &c. But when he called again, in October, two months from his first visit to me, and near *three and a-half* from the first occurrence of his illness, I found the swelling almost totally removed, and to my surprise, an evident dislocation of the head of the humerus into the axilla. This state of things, his father informed me, began gradually to appear as the swelling was reduced, and he said "they verily believed the boy's shoulder was out of joint." They declared that no force, blow, or accident of any kind had occurred either recently or at any time within their knowledge, but that, as the natural size of the limb returned, they saw this to be its condition. I found the arm as free as old adhesions might be supposed to leave it, yet so fixed as to resist my strenuous individual exertions to effect its reduction. Procuring half a-dozen stout assistants, I placed a folded towel so as to press upon the acromion process, when the thumb of an assistant held it, and gave the ends of it to two men to make the counter-extension. As his arm was still swoln, and the sinus still open, I placed the forearm at right angles to the arm, and with a *moistened* roller fixed the fold of another towel upon the forearm as near as possible to the elbow, the end of which I also placed in the hands of two stout assistants. Then taking his wrist in my left hand, and the arm near the shoulder in my right, I directed them to pull in the direction of an angle of about forty degrees to the perpendicular of his body, when I perceived the bone move, which my little patient also gave notice of himself; I directed the extension to cease instantly, and with a proper motion of the arm, I as instantly replaced it in the socket. I ought to remark that the extension was *repeated once* with their whole force, before it gave way. Placing a pad in the axilla, I bound his arm to his body, and suspended it in a sling, prescribing rest, good diet, &c. and directed them not to meddle with the sinus, hoping that it would soon close up. When I saw him two months after this, the arm remained in place, though they said it had required *most particular attention to keep it from slipping out*, but the sinus still discharged a thin watery matter. I now introduced a probe six inches in length into the sinus, which penetrated so far as just to leave the point in my grasp, and allowing for the obliquity of its direction, it penetrated *precisely to the head of the humerus*, near which it scraped upon *rough carious bone.* I now ordered strong injections of sulph. cup. to be used, and after a month or two, the oil of turpentine. Small spiculæ and fragments, to the size of half a pea, of dead bone, are sometimes found in the discharge, and in this state it awaits my future operations.—But the shoulder is so strong, that at his last visit to me, I had the pleasure to see him exercise the arm with great freedom and effect.

This case I found to be a tissue of mysteries,—the *abscess*, the *spontaneous dislocation*, the *carious bone*, puzzled me, when combined, although all simple in themselves. A few weeks after, in looking over some notes taken while attending upon the practice of Dupuytren at the Hotel Dieu, I found the following passage, which seemed to set the case in a new light:

"Dupuytren has observed many cases of a disease of the shoulder joint, like the common disease of the hip joint, and generally the effect of scrophulous inflammation. It is attended by the same symptoms as the other, except that their seat is changed. There is first pain in the shoulder or arm, following some exertion or cause of that kind, this is succeeded by pain in the arm, forearm, and elbow joint. It advances from a slight inflammation till there is ulceration of the joint, and spontaneous dislocation, attended by fever, &c. Of this disease many cases have occurred at the Hotel Dieu. I have entered to-day a girl of fourteen, who has this complaint, the symptoms above detailed followed a violent exertion, but she has now no fever. 1821, Feb."

This seems to me to explain the case above detailed, better than can be done in any other way.

If I were asked at what precise period the dislocation took place, I confess I should be unable to tell; and if I were asked if I thought the *joint itself* destroyed by ulceration, and the *articulating portion* of the *humerus carious*, I would say distinctly, I did not. I conceive that these processes may have gone on so *nearly in the vicinity of the joint* as to have *produced dislocation*, as has often been remarked in cases of *tumours pressing against joints.*

ART. XII.—*On Amputation at the Knee-joint.* By NATHAN SMITH, M. D. Prof. of Surg. &c. Yale College.

FOR several years I had contemplated amputating at the knee-joint, whenever a case should occur in which it would be imprudent to operate below the knee, on account of disease in the bones or soft parts, and in which the superior part of the articulation was sound. I had often performed the operation on the dead subject, and found that it might be so accomplished as to leave a very good stump.

A case warranting the operation, occurred to me in April, 1824. Miss R. D——, of Brunswick, Maine, having a disease in both the bones and soft parts of the leg, of long standing, and so extensive that it was thought improper to operate below the knee, and as the inferior part of the femur was sound, I amputated at the joint.

The operation is performed as follows: Mark two points one on the out and the other on the inside of the limb, the latter half an inch below the head of the tibia, and the other opposite to it.

Then draw a semicircular line from one point to the other, over the anterior part of the leg, and in such a direction that its lower part shall touch the lower part of the tubercle on the tibia into which the ligament of the patella is inserted, and then mark another circle on the posterior part of the leg, exactly corresponding to the former. The above lines limit the two flaps, the former of which will be formed of the patella and its ligament, together with the investing integuments, and the latter of the head of the gastro-cenemeus, the tendons of the flexor muscles, and the popliteal blood-vessels and nerves. The operator should first raise the anterior flap with the patella, which will expose the anterior part of the joint, and render the division of the lateral ligaments easy. Two or three strokes of the knife will then complete the section of the lower flaps, with the crucial ligaments.

In the case mentioned above, the patient recovered with out the occurrence of any thing unpleasant. It was accomplished with less pain to the patient and trouble to the operator, than when the separation of a bone is required. The stump will obviously be more useful, as the lower part of it is formed by the patella which becomes anchylosed to the femur.

This operation has been deprecated by many on account of the complicated structure of the joint, and because of the violent and often destructive inflammations which result from wounds of the knee. By the operation, however, the most complicated part of the apparatus is removed, and the motions of the joint, which is the unfavourable circumstance in wounds of that part, do not irritate the wound. The synovial membrane immediately assumes the adhesive inflammation, and union is speedily effected.

Art. XIII.—*Practical Remarks on the Secale Cornutum, with Suggestions in regard to its probable Modus Operandi.* By Charles Hall, M. D. of St. Albans, Vt.

For the following remarks on one of the most interesting articles of the Materia Medica, we are indebted to a gentleman, who, in a very extensive practice, enjoys ample opportunities to exercise his professional acumen upon pathological and therapeutic phenomena. The subject is certainly one which ought particularly to interest the cultivators of American Medical Science. As a medicinal agent, it was first satisfactorily tested and adopted in this country, although its peculiar effects, fortuitously ascertained, had long been known to the vulgar. Dr. Stearns was the first who redeemed it from among nostrums; and the writings of Bigelow, Tully, and others, have overcome the professional fastidiousness which had so long rejected it. Still, however, the modus operandi of this agent, and consequently the principle controuling its employment, are as yet undetermined, and its value as a remedy by no means fixed, as appears from the conflicting opinions which are entertained in regard to it. In these respects, therefore, it may be regarded as a fair subject for investigation, and it is particularly the province of American physicians to complete the inquiry which has been, by them, so honourably begun. The facts furnished in the following paper in relation to this subject are interesting and important. The inferences, which appear to have been independently drawn, correspond very nearly with those of Dr. Hosack and some others, who have contributed their observations on this subject.

Remarks on the Properties and Effects of the Ergot.

The singular operation of the Ergot, when administered to expedite child-birth, has been witnessed with a degree of astonishment—and although its parturient power is rendered *obvious* in many instances, yet the manner in which it exerts its influence, is but imperfectly known. Some have considered the effect as specific on the uterine system—others, as sympathetic to a peculiar impression on the stomach and nervous system—some have even viewed it as inert both on the mother and fœtus, while others have had the strongest conviction of its destructive tendency—and all have been constrained to acknowledge its equivocal character as a remedy.

Although, in most cases of real labour, the child is forcibly propelled into the world, by the aid of this article, there are, nevertheless, instances in which its power is not exerted to this end—instead of that powerful, unceasing increase in the pains of labour, which so astonishingly expedites the expulsion of the fœtus, it sometimes excites constant distress of a general nature, without any apparent influence on the efforts of labour. In cases where it does not favour immediate expulsion, it seems to have a fatal tendency on the child; for in such cases, the child is generally still-born.

As the ergot is still held, by some, in high repute in accelerating parturition, and, as the effects attributed to it in this essay, are known to have occurred, it is important that we should inquire more carefully into the *nature* of its parturient effects. That it has saved life in some cases, cannot be doubted; that it has destroyed it in others, is equally certain.

My first knowledge of this article I derived from an old woman, among the Dutch inhabitants in this vicinity, in the year 1811. They had been in the use of it, to hasten child-birth, for a long time. I was, at first, very incredulous as to its power; I believed it to be like tansay, mother-wort, and various other medicines of this class; but my incredulity was staggered after several times witnessing its effects. Not long after this, I saw public notice of this substance, recommending it as safe and useful in many cases of natural labour. I have since frequently had recourse to it; and have learned, not only from my own experience, but from that of other's, that it does not always increase the pains of travail; that it is hazardous under any circumstances, and occasionally produces fatal effects.

The experiments which have been made upon this singular excresence, show it to be of a poisonous quality. It has not only manifested this property when received into the stomach as an article of medicine, but when its growth has been abundant, and used in the article of bread, its effects have been marked (in France and elsewhere) by extraordinary instances of gangrene among the people. Those acquainted with its use in the time of labour, have witnessed that it has produced mental agitation, pulse small and feeble, and that it has deranged in some degree all the functions of life; and in the most auspicious cases, where the child has been preserved, it has been propelled into the world asphyxiated—the circulation of the umbilical cord partially interrupted—the body and extremities much discoloured—and, in many cases, life almost wholly extinguished. But when the labour has been protracted, the child has generally been born dead. I have noticed one instance, in which the fœtus, when expelled, was not only dead and dark coloured, but its skin was all over completely blistered; though there was undoubted evidence of life but a few hours before, and when the ergot was administered.

In cases of obstructed menstruation, I have known the ergot administered as an emenagogue, but have never known it remove the obstructions; nor has it in such cases induced pressure or pain in the uterine system. It brought on in these cases great distress in the region of the stomach—agitation of the whole system—nausea, and sometimes vomiting. In one case, there was nearly a table-spoonful of the powder taken; it produced oppression about the precordia, general trembling, *discolouration* of the lips, cheeks, extremities, and, more or less so, of the surface generally.

It has been resorted to, in vain, by the unfortunate, in the earlier months of gestation, to promote abortion. In these cases, as I am informed, the drug has been almost uniformly rejected from the stomach soon after taken, without inducing any apparent influence, either on the womb or fœtus. I have given it, in some cases of threatened abortion, attended with hæmorrhage, where it was deemed expedient for the safety of the patient to be rid of the fœtus; but instead of a dislodgment, a cessation of the hæmorrhage, and of every other sympton of abortion, succeeded, and the woman went safely through to the full time. In these cases, also, the drug was vomited soon after its effects were manifested. The well attested influence the ergot has in checking uterine hæmorrhage, alone shows its immediate effect on the circulation; there are various other proofs which substantiate this position; from which, and from the above, I would proffer an opinion, as it respects the *modus operandi* of the ergot in accelerating parturition; and also, as it respects the causes of its failure.

From the researches and experiments of Magendie and others, it is rendered certain, that there are absorbent veins of the stomach and intestines, by which substances do directly enter the sanguineous system. This truth has recently been illustrated by Prof. N. R. Smith, in his new and interesting theory of digestion. That such is a fact, the quick operation of the ergot serves further to substantiate; that it directly enters the mass of blood, and retards the circulation, its effects on the mother and fœtus go fully to establish; that it contaminates this fluid, and thereby kills the child, the case of vesication of the fœtus from this article, and its tendency to produce gangrene, are confidently referred to.

On these truths I would found the belief, that, in parturition the child is not propelled by any specific influence which the ergot exerts on the fœtus or uterus; but rather by its poisonous effect on the fluid which sustains life, rendering it unfit for the support both of the mother and fœtus. We have all witnessed, and have ample accounts of the same, that, in a state of gestation, any fatal tendency in the mother, brings on speedy efforts of the animal economy to save the life of the child by delivery. Cases are in the recollection of almost every practitioner, of women's dying in this state from disease, who. just prior to death, were delivered of their offspring, which has sometimes survived; hence I would infer, that, by the same law of the economy, the child is expelled when the ergot is administered. In favour of this opinion I would notice, that it is only about the period of natural labour that the ergot will induce a dislodgment of the fœtus. That it should not have this effect in the earlier months of pregnancy, it may be remarked, that the resistance to expulsion now is much greater, and the current of blood to the womb and *fœtus*, much less in proportion, than at the full development of the child; hence, the fœtal circulation is but slightly affected, the poisonous drug not having so free access to it now, as at the later stage of gestation; thence, the efforts of nature, that might accelerate parturition at the full time, are now more particularly exerted to expel the noxious cause, and thereby both mother and child are preserved. The want of uniformity in the operation of the ergot, goes also in evidence, that its parturient power is solely from the disorder it excites in the vascular system, placing in jeopardy both mother and fœtus; that it excites no specific influence in the uterine system, more than on other parts of the body; that its effects are alike throughout the general system, only greater where it makes its first impression; that its expulsive influence is nothing more than its poisonous effect on the mass of blood, partially divesting it of that vital principle so requisite to sustain the general circulation, and consequently rendering it inadequate to sustain the life of the child; hence the whole system is in agony, and all its efforts are convulsively exerted to resist the offending cause; and the tendency to dislodge the fœtus is in proportion to its mature development, and its dependance on the general circulation for existence.— Should circumstances be propitious, delivery generally succeeds in a very short time; but should there be a wrong presentation, or unusual resistance from other cause, the child is deprived of life by its vital sustenance being vitiated or withheld.

Against the position, that the therapeutic phenomena of the ergot are wholly nervous, and that the change in the colour, quality, and circulation of the blood, is to be attributed to this cause. I would urge, among the reasons already cited, its remarkable effect on the fœtus in the case above. It is irreconcilable to me, on this hypotheses, that the child should so speedily become vesicated from this article, through the medium of the nervous influence.

All the benefit resulting from its use in natural labour, is the saving of a little time. In cases of exhaustion from protracted natural labour, it has sometimes had a decidedly good effect; but in other instances of the same sort, it has evidently destroyed the child. In short, in my opinion, that the great value of the remedy is in controlling uterine hæmorrhage, but in child-birth, even although the rules governing its employment be observed, I am fearful its frequent ill effects will more than counterbalance its benefits.

ANALECTA.

1. *Case of Uterine Hemorrhage, in which the operation of Transfusion was successfully performed.* By C. Waller, Esq.—I have for a long time been of the opinion, that the transfusion of blood from the vessels of one person into those of another, is an operation that ought by no means to be ridiculed, much less to meet with that hasty condemnation which it has been its lot to experience from some of the members of our profession. This opinion has been further strengthened by an attentive perusal of the experiments on the dog, which have been so ably conducted, and so accurately described, by Dr. Blundell. I have also had some conversation with the Doctor on the subject; and the result has been to produce a firm conviction on my mind, that in cases (for example) of profuse uterine hemorrhage, if, notwithstanding the cessation of the bleeding, and the employment of the usual means, we find that the alarming symptoms of collapse increase or continue, so that there is reason to presume that, in the course of a few hours, the patient will die, it becomes our bounden duty not to neglect the trial of this operation. It is not proposed, till we have a greater accumulation of evidence on the subject, to employ the remedy *at once* in every case of alarming hemorrhage, but in those cases only where the usual means have been tried and failed: and, surely, there can be nothing ridiculous in this, unless we are so enveloped and shrouded in our own prejudices and opinions, that we are determined to consider every thing ridiculous which is of a novel nature.

The female, whose case I am about to narrate, was of a very delicate habit and strumous appearance. She was a patient in the charity of which I have the superintendance, and was attended by my friend, Mr. Jesse, of Manchester. I had myself seen her about two o'clock in the afternoon, in consequence of Mr. J.'s not being in the way. A large quantity of liquor amnii had escaped just before I arrived at the house. On examination, the head was still above brim, the os uteri nearly dilated, and, as well as the external parts, very dilatable. The pains, however, declined, and I left her, desiring her to send again when they began to increase: this took place in about three hours afterwards, and the child was soon born. Shortly after this, I was requested to go to Mr. Jesse's assistance; and, when I entered the room, the patient was to all external appearance dead: she was lying on her back, completely blanched, her face pale as the sheet that covered her; there was not the slightest tinge of redness on the lips; her hands and feet cold; the power of deglutition suspended; and there was no apparent respiration. On placing my finger upon the wrist, I could just discover the pulsation of the artery, with, however, occasional intermissions.

On inquiry, I found that the expulsion of the placenta, which was accomplished by nature, was followed by profuse hemorrhage, and that the symptoms of collapse had instantly supervened. The appropriate remedies—viz. the application of cold and frictions,—were immediately had recourse to; and, on my arrival, as the uterus was still large, although there was a considerable degree of contraction (for it felt hard,) and as there was a slight draining of blood, I continued the cold applications to the belly, and applied warmth to the feet; her lips were also smeared with brandy. After a short time she was able to swallow, and then brandy and ammonia were liberally given. For a few seconds after the administration of these stimuli, the pulse would rise a little, but soon sank again. The bleeding soon ceased entirely; and, as she was getting generally cold, we wrapped her up in blankets, and continued the brandy, but with no greater success.

After persevering for about an hour and a-half in these measures, (which I think was giving them a fair trial,) and finding that we were gaining no ground, I determined upon consulting Dr. Blundell as to the propriety of performing the operation of transfusion, especially as he had very kindly offered to come to my assistance, in case of such an emergency as the present, whether it occurred in public or in private practice.

The patient resided in the neighbourhood of Finsbury-square; some little time, therefore, necessarily elapsed before we returned, and the impression upon my mind was most decidedly that we should find her dead. Contrary, however, to my expectation, I found her not only alive, but I thought the pulse was rather more perceptible, although it would not bear the pressure of the finger; we therefore agreed to have every thing in readiness for the operation, but not to perform it at present.

After waiting nearly two hours, we found that the pulse certainly was not lower, and for the last hour it appeared to beat with more regularity. Dr. B. and myself then left her for about an hour, and on our return it was evident that the patient had lost ground; the pulse was fallen again, and she was still lying in that alarming state of faintness, that, although death was not indisputably certain, it was the deliberate opinion, both of Dr. Blundell and myself, that the presumption against her surviving was so strong, that it became our duty to act. The operation was, therefore, determined upon.

The vein in the bend of the arm was laid bare, and an incision of sufficient extent to admit the pipe of the syringe was made into it. As some little blood flowed from the vein, it was found necessary to pass a blunt needle under it, a little below the orifice; by this we could completely restrain it. Now, as in these cases the patient has not a tea-spoonful of blood to spare, it will be found advisable, in future operations of this nature, to adopt this plan before the opening into the vein is made.

The syringe used by Dr. B. was similar to the common injecting syringe, and contained two ounces. It is, of course, highly necessary that all air should be excluded, as much mischief might accrue from its injection into the vein. The blood was drawn from the patient's husband into a tumbler, and Dr. B. stood ready with his syringe to absorb it instantly,—in fact, while it was flowing: it was then immediately introduced into the orifice in the vein, and cautiously injected. No effect appeared to be produced by the first injection of two ounces, but towards the end of the second there was an approach to syncope; the pulse fell a little; there was sighing, with efforts to vomit, although nothing was ejected. These symptoms ceased spontaneously in the course of a minute or two: indeed, they were very similar to those which occur after venesection, when there is a tendency to, though not actual deliquium.

I should have stated that the patient threw up the contents of her stomach previous to the commencement of the operation; and, whether this was a repetition of her sickness, or whether it was produced by the injection, future observations must prove. In one of those cases which Dr. Blundell has witnessed (in a female,) symptoms somewhat similar were induced; but, in the case of Brazier (a male,) there were no such symptoms, although a much larger quantity of blood was injected.* As, however, in the present limited state of our experience, great caution is required in conducting the operation, and as the patient expressed herself easy, it was considered advisable to proceed no further. Her pulse, which before the operation was 120, was now 110, but of course still feeble.

On our visit in about six hours afterwards, we were gratified in finding that our patient had rallied considerably: her pulse was now 100, and much rounder. She complained much of hunger: a nourishing, but unstimulating, diet was therefore allowed her: and she recovered without a single unpleasant symptom. She slept well, and awoke refreshed, and never complained of that unpleasant state of head so common after hemorrhage. In fact, she required no medicine at all, except a table-spoonful of castor-oil, which was given her on the fourth day, and which purged her much. This irritable state of bowels, as your readers well know, is a common occurrence in these cases. There was no attempt at union by adhesion, and it was not till after the lapse of many days that the vein was healed.

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* Vide *Medico-Chir. Transactions,* vol. x.

Now, it may be said that this patient might have recovered if no blood had been injected; and this is an objection which it is impossible peremptorily to deny; but, as stated above, it was our *deliberate* opinion that the chances were formidably against her, and I think in that opinion any gentleman who had seen the case would have concurred. But this kind of objection might be made to every remedy which is now, or ever has been, in use. We have yet to learn in these, as well as in many other cases, what the powers of nature can do; for it is impossible demonstratively to prove whether the desired change has been produced by nature or by the remedy. It by no means follows that, because death did not take place immediately after the irruption of the blood, that therefore the patient would have survived; for there was in this instance nothing like a rally, even after the lapse of six hours. In the only fatal case of hemorrhage which it has been my lot to witness, the patient survived three hours after the discharge had ceased, and then expired, although the usual means were vigorously had recourse to during the whole of that period. I have frequently, very frequently, regretted that transfusion had not been tried in this instance; though, had the patient been saved by the operation, a doubt might have been raised whether the injection of the blood was the cause of recovery.

Again it may be objected, that the injection of so small a quantity as four ounces of blood was not likely to save a woman who was sinking from hemorrhage. To this I would reply, by stating it to be my firm conviction that this quantity, though small, was sufficient to turn the scale in her favour. Be it remembered that the intention of the operation was not to restore the patient to her former vigour, but merely so far to increase the quantity of the circulating fluid as to ensure the continuance of the heart's contractions, till the system could recruit itself by the more circuitous route of digestion and sanguification. I would also appeal to those who have been in the habit of seeing much of uterine hemorrhage, whether they have not occasionally met with cases where the patient has been brought so low, that another gush of blood, though it should not exceed four ounces, would in all probability be sufficient to prevent the patient rallying: if so, it justifies the opinion I have expressed above, that the quantity, though small, was sufficient to turn the scale in her favour.

The above case has, however, proved, with all the force that a solitary fact is capable of proving any thing—

1st. That the operation is exceedingly simple, and can be performed with the greatest ease.

2dly. That four ounces of blood may be injected into the veins of a woman who is in danger of sinking from hemorrhage, without producing any noxious effects; or, at the most, without occasioning more unpleasant symptoms than often occur in consequence of the abstraction of a small quantity of blood in some subjects; and that, therefore,

3dly. It is highly probable that the blood thus injected is at once made subservient to the general purposes of the circulation.

111, *Aldersgate-street; August*, 1825.

2. *Origin of the Spinal Nerves.*—M. Amusat announces the following facts as certainly established:—1. That the ganglion, which is situated not far from the origin of each of these nerves, belongs exclusively to its posterior root, and that the threads of the anterior roots are only coiled round it. 2. That this ganglion is not formed of a homogeneous tissue. 3. That the nervous filaments are not interrupted at this spot; but that they are perfectly continuous, only separated the one from the other, and reinforced by the gray substance; and that they form a larger bundle in going out than on entering the ganglion. 4. That the filaments of each root agree in such a manner in their ulterior divisions, that the small nerve contains a thread of each: one destined for sensation, the other for motion.

M. Amusat also announces that the nerves of the sacral plexus, in reuniting to form the sciatic nerve, cross each other in pairs. —*Revue Medicale*, Août.

3. *Chyle in the Veins of the Jejunum.*—Dr. Meyer, professor at the University of Boun, relates the following case:—A robust man, aged about seventy-nine years of age, died suddenly in consequence of asthma; and his body was taken to the dissecting room. This man had been healthy from his youth: he had never suffered from any severe illness; only, in the course of long military service, he had experienced some cutaneous affections, particularly the itch. He was a great brandy drinker. About six months before his death, he had complained of his chest, of palpitations of the heart, of jaundice, with symptoms of dropsy; but, by proper remedies, he was so much recovered as to return to his usual habits. At the end of three months, his dropsical symptoms returned, with a purulent expectoration, and œdematous feet. He again became a little better; but shortly afterwards he suddenly felt violent darting pains in the chest, with violent cough, and other symptoms of inflammation of the lungs. He was bled, and the blood exhibited the buffy coat. He felt relieved the following day; but, a few hours after having taken some soup, he died suddenly.

The examination of the body showed the following particulars: —A great quantity of serum in the chest, as well as in the pericardium; the lungs adhering to the parietes of the thorax, and full of tubercles, with small crysts containing pus. There was no remarkable alteration in the viscera of the abdomen. The intestines were then taken out, and preserved for the purpose of demonstration. When the different portions of them were submitted to especial examinations, on the small intestines vessels of a grayish white were perceived, a little inclining to yellow in some parts, and equally visible on the internal surface of the canal as on the outside. At first they were taken for lymphatics; but a closer examination proved them to be veins. The lower third of the duodenum, the entire jejunum, and a portion of the ileum, were spread over with similar venous ramifications, containing a liquor analogous to cheese: nevertheless, this liquor only existed in the minute ramifications upon the surface of the intestines; but, at the spot where the mesentery is inserted, the venous trunks to which these smaller vessels conducted, contained only common blood. Upon many points might be seen, with the naked eye, the little roots of the white veins advance to the edge of the valves of Kerking; and it appeared to the Doctor that, pressing lightly, he drove the white liquor contained in the venous branches to the surface of the mucous membrane. The small intestines were full of chyme. No lymphatic filled with chyle was to be found. Unfortunately, the other abdominal organs were not in a state to permit of examination.

It is not to be doubted, continues Dr. Meyer, that the grayish liquor, which was contained in the smallest branches of the veins, was truly chyle, the colour and consistence of which are in general relative to the quantity of chyme. But it may be asked, how did it happen that the lymphatic vessels contained no chyle, since the patient appeared to have died in the moment of chilification. Circumstances do not permit him to resolve this question; but he conjectures that the venous system may have outlived the lymphatic. Perhaps, the right side of the heart had outlived the left: in this case there would have been a prolonged diastole and systole of the right ventricle, which might have determined the absorption of the chyle by the smaller venous branches of the small intestine. The appearance of the heart rather corroborated this hypothesis.—*Journal Comp.* Août.

4. *Remarks on the "Living Skeleton."* By John Boyle, Esq. m. r. c. s. &c.—To those unused to visit the bedside of disease and death, the living skeleton (as he is called) exhibits a most extraordinary and pitiable appearance; but, to the physician or surgeon, the most remarkable peculiarities are the great depression of the sternum, and the singular disproportion in the comparative size of the muscles.

On looking at the face, nothing particular is observable: it merely presents the aspect of one who had lived a sedentary life,—an appearance which is strengthened by high cheek-bones and a dark complexion. It is the contrast, then, between this and other parts of the body that excites curiosity, and to which my attention was drawn during the few minutes allotted to spectators.

The muscles of the neck and those which elevate the scapulæ are powerful; those of the posterior part of the pelvis, as also the fore-arms and legs, are not very small, and are particularly firm. The gastrocnemius of the right leg is of moderate size. The humoral bones are certainly smaller than natural, and exhibit but slight traces of muscle, barely sufficient to give a feeble motion to the fore-arms. The muscles of the trunk, and those of the thighs, are very indistinct; from which it will appear, whether the work of nature or of art, that certain sets of muscles, at alternate spaces only, suffer from emaciation in a great degree: as, for example, the muscles of the face, neck, and shoulder-blades, are well defined; those of the trunk and arms are particularly small; those of the fore arms and posterior part of the pelvis are comparatively large; whilst those of the thighs, again, are weak, and those of the legs may be pronounced strong.

The sternum is concave, instead of being convex, and appears to press the thoracic viscera most at the upper part; a circumstance which, in some measure, accounts for the action of the heart and lungs being perceptible beneath their natural situation in the chest. The abdomen has a strange bag-like appearance, as might be expected, from relaxation and want of power in its muscles. The state of the pulse, tongue, and skin, as well as the appearances of the eyes, are indicative of as good health as could possibly be expected, considering the necessarily debilitated state of the system.

The "living skeleton," like any other subject which presents a deviation from the ordinary course, can serve only for the gratification of a vague curiosity, unless attention be directed to the causes of those peculiarities which render him remarkable: then only does he become a subject of rational and useful inquiry. It is with a view to such an inquiry that I offer the following suggestions; and if, as I conjecture, art shall be found to have been conjoined with nature in producing the extraordinary results which engage public attention, those results would certainly not be rendered less interesting by the inquiry.

That extrinsic measures are frequently practised upon the human frame for interested purposes, might be proved by numberless cases; but, as most medical men are more or less acquainted with these circumstances, it may be sufficient to advert to the numerous stiff joints and wasted limbs exhibited in time of war, by soldiers and sailors desirous of quitting the public service; by itinerant mendicants at all periods, in order to extort charity; and by the Indian fanatic, for the less wise purpose of *gaining cast.*

The malformation of the chest, I admit, must have been either congenital or the result of an accident during infancy: but that such irregularity of the muscles as is manifested in this extraordinary being, is a mere frolic of nature, or altogether the result of disease or accident, appears inconsistent with experience and physiological inference; although some of them may have existed, and may have afforded encouragement for the practice of such external measures as are capable of lessening the bulk and strength of the moving powers.

The right side, over the region of the liver, bears marks of the application of numerous leeches; from which it may be inferred that there was active inflammation at some past period; and which, together with the malformation of the chest, would soon establish a state favourable for the action of local pressure, and, consequently, for the diminution of parts intended to be deprived of healthy action.

It may be said, in reply to this, that if we lesson the force of the circulation in the superior part of an extremity, the inferior portion must suffer in a greater degree; but the fact is not so, as is every day proved by the result of operations for popliteal aneurism, and other cases requiring the security of large arterial trunks, whose vitality in the more distant parts is kept up by anastomosing branches. There is one more strong reason for supposing that the less perfect development of muscle upon alternate extremities mainly depends upon art,—namely, that the muscles at the extreme parts of the body are by far the most powerful; a circumstance which is by no means likely to arise from natural causes, for, as any tyro in medicine must know, in debility and approaching dissolution, it is the remote parts of the body that suffer first, from deficiency of circulation and nervous energy.

I would only add, that the almost perfect growth of all the bones of the body is presumptive proof, at least, of an equal distribution of nutrition; and, consequently, that nature performed her duty up to the period of manhood.

Lond. Med. and Phys. Jour.

5. *Of the Mucous Membrane of the Stomach and Bowels, in the state of Health and Inflammation; or, Pathological Researches concerning the different healthy and diseased Appearances presented by the Stomach and Intestines.* By C. Billard, &c. &c.—This Essay, it seems, was crowned by the "Athenée de Medicine," of Paris, and we had ordered it for the purpose of analysis, when we met with a very full digest of its contents in one of the French Journals,* from which we have taken what follows.

The mucous membrane lining the alimentary canal is well known with regard to its structure, and certain varieties of texture in different parts of its surface. But descriptive anatomists have not been sufficiently clear with regard to the appearances of the membrane in its sound state; owing to which circumstance we frequently find ourselves puzzled to distinguish between the healthy condition and one resulting from inflammation. This distinction, however, is very essential, and especially now when no post-mortem examination can be regarded as complete without an attentive and minute inspection of the intestinal canal. To arrive at this desirable point, the author first details a set of dissections, by means of which his object is to point out the various aspects of the mucous membrane in the state of health. He compares the consequences which result from this investigation, with what has been written by various authors on the subject; and, in conclusion, deduces the general conclusions resulting from this double source of information,—viz. reading and anatomical observation.

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* *Archives Generales de Medicine,* Aout.

The mucous membrane of the stomach and bowels presents perceptible differences according to the age of the subject; and cases are related at some length to illustrate this. The information conveyed is interesting; but we shall take leave to confine ourselves to the point more immediately under discussion, and consequently to abridge the observations very considerably.

Embryo, from four to five months old.—The external surface of the tube whitish, and presenting very fine vascular ramifications; the mucous membrane of the stomach rose-coloured, and without furrows: this organ contained a small quantity of clear mucus. In the duodenum, the mucous membrane was of a reddish white, none of the valvulæ conniventes being yet manifest: the same appearance presented itself till the termination of the ilium, which had a brownish stain; this was capable of being removed by washing. Inner membrane of the cœcum a little rose-coloured; that of the ascending colon stained green by the meconium; the colour not removed by washing.

Fœtus of seven months.—Mucous membrane in the stomach thick, white, with a little rose-colour; in duodenum whitish, shaded with rose. Slightly marked transverse lines, indicating the site of the valvulæ conniventes. The jejunum and ilium of a rosy white; the inner surface of the large intestines greenish, from the meconium.

Fœtus at the full period.—Inner surface of the stomach presenting longitudinal striæ formed by the mucous membrane, which was of a light rose-colour; orifice of the pylorus white. The valvulæ conniventes in the duodenum composed of little rounded transverse lines, which disappeared on the slightest stretching of the tube. The mucous membrane throughout the whole of the small intestines white, shaded with rose; villous, but not so thick in proportion as in the two preceding. Two invaginations were found in the inferior portion of the small intestine, the mucous membrane being quite white in these parts. Large intestine filled with meconium, and internally green. The mucous membrane in this subject was easily detached from the surrounding parts. This fœtus was destroyed during delivery.

Infant of twenty-two months.—The subject of this observation was killed by an injury of the head, having previously enjoyed good health. The mucous membrane of the stomach not thick, but sufficiently villous; of a milk white, but smeared with clear mucus. At the cardiac orifice, the œsophagus was seen to terminate by a white festooned circle, which appeared folded upon itself. The valvulæ conniventes of the duodenum much developed; but there existed between the pylorus and first valvule a space as wide as two fingers' breadth, where the internal membrane was white and villous, but without furrows. The jejunum white, coloured with a yellow fluid, which, however, did not stain it. Same appearance in the ilium, at the end of which were numerous little elevations, white in colour, soft to the touch, and having the size and appearance of millet-seeds. The internal membrane, throughout the whole course of the tube, could only be detached in small portions, the torn edges of which did not bleed.

In this case it will be perceived there was no longer any of the rose-colour of the mucous membrane; the valvulæ conniventes were more distinctly marked, and the glands of the ileum more developed. The author proposes to designate by the name of *pylori-valvular* that portion of the duodenum which intervenes between the first valvule and the pylorus, and which is for the most part destitute of striæ.

Girl of three years old.—Died at the end of five days, of acute arachnitis. Mucous membrane of the stomach of a milk white, soft, and easily detached. In the pylori-valvular space was found a layer of mucus, beneath which the membrane was of a beautiful light rose-colour. The rest of the small intestines white.

Child of eight years.—This child was killed by a musket-shot. Inner membrane of the stomach of a milk white, thick, solid, and adhering strongly to the subjacent coats. The duodenum white, with a slight ash-colour. Much mucus in the small intestines, towards the end of which the ash-tint had disappeared.

A piece of artillery burst at Angers, during a public festival. Three children were killed, and the bodies examined at the hospital.

The first, aged ten years—was killed on the spot. Inner membrane of the stomach and small intestines white; the duodenum having a few yellow stains.

The second, aged fourteen years—killed by an extensive wound of the chest. Mucous membrane of the stomach white; that of the duodenum white, with a shade of ash. In the middle of the jejunum a yellowish tinge, for six fingers' breadth. In the ileum, the membrane whiter and finer than in the preceding portions. In the ileo-cœcal region, some injection of vessels; the cœcum of an ash-white.

The third, aged sixteen years—died some hours after receiving a wound in the region of the hip-joint: he had taken food just before the accident. The stomach filled with aliment; the inner membrane covered with very tenacious mucus, and of a general rose-colour, particularly at the great curvature. The duodenum was filled with a yellowish paste, the mucous membrane being of the same colour as that of the stomach. Beneath this membrane were perceived the blue trunks of veins, which did not give rise to any lateral ramifications. The jejunum was remarkable for the ash-coloured tint of its inner membrane, a hue entirely different from that of the stomach and duodenum.

Young man, aged nineteen years.—Killed by throwing himself from his window, and injuring the head; examined eight hours after death. Stomach filled with a quantity of food. The mucous membrane of the stomach of a rose-colour, with numerous folds, having different directions. Near the pylorus, a number of small glands, white, and soft to the touch: these parts covered with a layer of mucus. The pylorus white, suffering the fore-finger to pass. The membrane of the duodenum white, verging to ash; jejunum the same, having a yellow patch in the middle. In the ileo-cœcal region were found a number of glands, as at the pylorus. In the colon, the ash-tint described in the small intestines was no longer to be seen. Large portions of the mucous membrane could be removed at any part of the canal.

Man aged twenty-eight years.—Killed by an injury of the chest, which he survived an hour. Examination twenty hours after death. Stomach filled with food; the mucous membrane of a fine white, with a slight shade of rose; in the numerous furrows between which was abundance of mucus, having a shade of red. The duodenum white, and slightly ash-coloured. Towards the end of the ileum, three or four patches of bright yellow appeared in the midst of the white surface of the mucous membrane, and which resisted washing.

Man aged forty-five years.—Killed by a fall, which produced rupture of the aorta; examined fifteen hours after. Stomach containing food; mucous membrane white, shaded with red, having numerous striæ and abundance of viscid mucus. At the pylorus, the membrane whiter, and very villous; the duodenum having throughout an uniform light rose-colour, which was lost in the jejunum and ileum. The membrane of the great intestine white.

In the above cases, no reasonable doubt can be entertained with regard to the healthy state of the digestive organs, as the patients died of diseases unconnected with them. Three other cases are detailed, but these we omit, as the individuals laboured under complaints of some duration.

The general summary from the preceding observations is—first, that the mucous membrane of the stomach and bowels presents general characters, which are peculiar to it, and distinguish it from other membranes of the body; secondly, that it has characters peculiar to different ages; thirdly, that the colour varies according as the examination is made during or after digestion.

I. *General characters.*—The general characters regard principally the colour of the membrane, the folds or striæ which it forms, and the villosities and mucous follicles proper to its structure.

The colour of the stomach in the adult is usually whitish; that of the duodenum and jejunum white, verging to ash-colour: this ash-colour terminates at the conclusion of the ilium, and the membrane becomes whiter in the great intestine. The mucous striæ or furrows of the stomach have an irregular disposition, and do not always exist within the organ: generally they are most numerous at the great curvature, and co-exist with a contracted state of the stomach. As observed above, there constantly exists between the pylorus and the first of the valvulæ conniventes in the duodenum, a space as large as two fingers' breadth, where the membrane is destitute of fold or valvule. In the natural condition, the valvulæ of the duodenum, all lying in the same manner, and partly covered by each other, considerably resemble a surface covered with plates which overlap. Towards the end of the small intestine, these valvulæ become further separated, and more and more effaced.

The villosities are abundant in the stomach, particularly towards the pylorus: in this region they are usually grouped, a little flattened, and separated by very fine lines, similar to those on the skin of the hands. These villosities are less perceptible in the small intestines, and so little apparent in the large, that at first sight one would be tempted to doubt their existence.

The mucous glands may become developed in the sound state, and their mode of development, together with the variety of appearances which they give to the membrane, merits particular notice. It is difficult to compare the thickness of the internal tunic of the alimentary canal to any given measure,—the only way of judging of it is by the greater or less degree of its transparency: if, then, we tear off a portion, and lay it upon the finger, we see this as through a piece of white crape. In general, the membrane is thicker in the duodenum; less so in the stomach; then in the rectum, jejunum, ilium, and large intestine. In the stomach, it is thicker at the pylorus, at the cardia, and at the lesser curvature, than in other parts. We must take care not to confound the relative thickness of the mucous membrane with that of the entire parieties of intestine.

Certain other peculiarities of appearance in the mucous membrane might be enumerated, which are consistent with its healthy state, although not invariably found. Thus, the whitish circle which terminates the œsophagus encroaches more or less upon the stomach; accidental folds, crossing the direction of those which are natural, are occasionally found on the internal surface of the intestines; yellow patches, or bands of this colour, are observed; and worms induce no corresponding change of the membrane.

When the mucous follicles are developed, their mouths must be coloured for the naked eye to distinguish them; and the orifice, or tubercle, which corresponds to the opening of the ductus communis choledocus, or pancreatic duct, is not easily perceived, without pressing the duct so as to force out its contents.

M. Billard relates the case of a man, killed by a fall from a great height, in the stomach or duodenum of whom the folds and valvulæ conniventes were deposited in such a manner as to form square and lozenge-shaped spaces, as is observed in the second stomach of ruminating animals. Besides this, funnel-shaped depressions were easily seen with the naked eye in the cœcum, analogous to those described by Sir E. Home; but which he could not discern without the aid of a microscope.

II. *Varieties of the mucous membrane depending upon the age.*—In the embryo and fœtus, the membrane is rose-coloured, which is probably owing to the habitual congestion in the vessels of the abdomen; the inner surface of the great intestine is generally green. At this period of life, abundance of mucus lines the inner surface of the bowels. In infancy, the mucous membrane is of a milk white; of a less brilliant white during adolescence; and, in the adult, of a white verging to ash. This last shade is more striking in elderly persons, unless they are arrived at extreme old age, when the mucous membranes, in a manner, lose their colour, like other parts of the body under similar circumstances. If there be any impediment to the circulation, the venous blood flows back into the intestinal vessels, the blue-coloured branches of which are seen ramifying under the mucous membrane, a circumstance not uncommon in old persons.

III. *Differences during or after digestion.*—During digestion there is a sudden and transient flow of blood to the stomach, the presence of which gives a rose colour to the mucous membrane. The duodenum, and occasionally even the commencement of the jejunum, participates in this colouring; but, except from this circumstance, it is never of a red tinge, as described by most writers. The other intestines afford no sensible varieties in their appearance.

It would appear that the blood thus accumulated in the mucous membrane during life, may remain there after death. Some of the cases quoted above tend to prove this; and M. Billard gives two remarkable facts in addition. A man hanged himself one evening in a public walk at Angers: next day the body was opened; the viscera were yet warm; the stomach, which was very small, contained three or four spoonsful of a whitish liquid, without smell; a white mucous substance formed a thin layer, which covered the furrows of the internal membrane, the colour of which was a light rose. Many lacteals were very apparent: on pressing them, the chile, which was seen through their parieties, was made to flow out. An old gens-d'arme, affected with palsy of the tongue, and a slight mental derangement, died from suffocation, caused by eating too fast. On opening the body, which was done next morning, the mouth, pharynx, and œsophagus, and even the larynx, were found filled with food; the stomach likewise was filled: the mass which this contained was softened and altered at the surface, but within, portions of beef and bread were recognised. The mucous membrane was of a fine rose-colour. These two facts are strongly in favour of the author's opinion respecting the state of the stomach during digestion.

Opinions of authors relative to the aspect of the mucous membrane of the stomach and bowels, in its healthy condition.—Sabatier has erroneously pointed out a reddish purple as the natural colour of the stomach. M. Portal justly remarks, that congestion of the veins may give a dark red to the lining membrane; but it is not correct to say that this colour is, in general, a mark of inflammation, as it may arise from causes entirely different. Neither is he correct in asserting that the jejunum is rather redder than the ileum. In the Anatomy of Bichat, we find only very vague notice of the appearance of the inner membrane of the intestinal canal in the stomach and duodenum: it is said to be reddish, and it would follow, from other remarks, that it is thicker in the small intestines than in the stomach; an assertion contrary to what is advanced by M. Billard. Gavard describes the inner surface of the stomach as gray, verging to red, but he says nothing of the colour of the intestines. Boyer, in calling the membrane of the stomach grayish, *(grisatre,)* seems to allude to that tint which the author before us describes as white verging to ash-colour, *(blanc legerement cendre;)* but Boyer adds, that this grayish colour has a shade of yellow or red. Now this last expression can only be correct with reference to the stain produced by the bile, and the redness produced by congestion; which, however, are but accidental circumstances. MM. Chaussier, Adelon, and Cloquet, assert that the stomach is a marbled red, and that the duodenum is reddish-

M. Billard does not regard the marbled appearance sometimes presented by the stomach, as belonging to its healthy condition; but M. Margolin thinks that the mucous membrane of this organ may have brown or blackish spots, without any other alteration of its texture. Beclard says that the colour of these membranes varies from white to red. Albert Meckel states that he never injected the villosities, without the mucus, and sometimes the whole contents of the canal, taking the colour of the injection; a phenomenon which may serve to explain the exudation of blood, which is occasionally found in passive congestions.

In concluding this part of the subject, M. Billard points out the resemblance and disagreement between the results of his observations, and those published in a posthumous Essay by M. Rousseau, inserted in the Archives Generales de Medicine, tome vi. "This gentleman," says our author, "lays it down as a principle, that, in the sound state, the mucous membrane of the stomach and bowels is white, or white with a slight tinge of rose. This assertion is true; but the question is, under what circumstances the membrane is white, or slightly rose-coloured? and this M. Rousseau could not determine in the conclusions drawn from his interesting observations. The recital of the observations themselves is sufficient to prove this. Thus, the three first individuals (who were executed,) in whom he examined the digestive organs a few moments after death, showed the membrane white or whitish; neither the stomach nor intestines contained any aliments. In the second, it is true, the stomach had in it a portion of red wine; but it is not stated that any food was found along with this. In addition to the arguments used by the author of this memoir to prove that the whiteness was not the effect of the hemorrhage from the decapitation, may now be added the testimony of the observations proper to myself, and in which I found the membrane of the stomach of a white, more or less marked. In the three other individuals, the post-mortem examination of whose bodies is recorded by M. Rousseau, the stomach and commencement of the alimentary canal did contain food, and the mucous membrane in them was rose-coloured. In the fifth instance, in particular, it was observed that the mesenteric ganglia suffered a white fluid, having the characters of chyle, to exude on being cut; and, lastly, in the sixth observation, M. Heller found the stomach sound, its mucous membrane perfectly white; the small intestines contained a small quantity of food, and were reddish.

"These cases bear a strong analogy to mine, and M. Rousseau might have deduced from them similar conclusions; but he did not draw all the consequences which naturally flow from them. The author quoted appears to me to deny too strongly the passive nature of congestions of blood in the mucous membrane, in the case of affection of the heart or embarrassment of the circulation. If he had admitted, as a consequence of his observations, that the mucous membrane of the stomach and duodenum might become rose-coloured during digestion, he would not have been in haste to say that the subject of his seventh observation had an affection of the stomach, because the mucous membrane was found of a deeper rose-colour towards the lower part of the viscus, and appearing, after a few washings, covered over with small patches and bands. Nothing can be more unfounded than this opinion, particularly when we consider that the stomach of this individual contained wine and food imperfectly converted into chyme. I shall demonstrate in another place, that little patches and bands of a red colour on the mucous membrane, are not always the consequence of inflammation. The author never speaks of that slight ash-coloured shade which usually mingles with the white of the mucous membrane. I do not, therefore, admit his conclusions, except with certain restrictions, which may easily be perceived on comparing his inductions with mine."

Of the glands of the mucous membrane of the alimentary canal.—Some historical researches on the anatomy of these glands precede the description of M. Billard. He remarks, that they were noticed by T. Willis; that Stenon, Malpighi, Glisson, &c. have mentioned them in their works; but that it is to Peyer, who gave them their name, and Bruner, who followed him, that we owe our exact knowledge of these glands,—so exact, indeed, that little remains to be added to what they have said. They have been described with care by Beclard and Meckel; and it is from the materials furnished by these various sources, that M. Billard gives the following description:—

These glands ought to be studied in their healthy and diseased condition. They must not be confounded with the glands of Lieberkühn, the existence of which is doubted by Cuvier, and which Meckel does not appear to have seen in his microscopic observations. These glands are not scattered at hazard on the internal surface of the digestive canal; they observe an order which it is of importance to examine: thus they are, first, isolated or solitary; secondly, grouped in little irregular masses; thirdly, united into oval or olive-shaped patches. Those which are isolated offer the most simple state of glandular structure: they are principally found in the stomach, in the pyloric region, in the duodenum, in the cœcum, and the rest of the large intestines. They occupy indifferently the free or adherent surface of the intestine, the summits of the valvulæ, and their interstices. Their size, in the healthy condition, never exceeds that of a millet-seed; in their centre may be detected an almost imperceptible point, which indicates the orifice of their excretory duct; they are white, soft, and are broken down with the utmost facility. They may be named *criptæ muciparæ.* These cryptæ unite, and form little irregular masses, which are generally found at the adherent edge of the digestive tube. At the inferior third of the ileum are often found patches, the number of which varies, but the oblong form of which, and the situation on the free edge of the intestine, are constant. They are limited by a border, which is but little elevated, on the level of which the valvulæ conniventes are always interrupted. They present three degrees of development, at each of which they have a particular aspect:—First, They present a surface which is simply wrinkled or puckered; glandular granulations are not yet perceptible; they appear to be situated beneath the membrane, which they elevate a little: they form in this state what are called by the author *plaques gauffrees.* Secondly, In the midst of these wrinkled patches some white granulations, occasionally pointed at the summit, appear here and there; and between them may be perceived a mucous fold, which unites them to one another. Thirdly, The entire patch is studded with elevations, generally pointed at their summit, and which are interspersed with folds of the mucous membrane: sometimes the *ensemble* of these folds and glands gives them a certain degree of resemblance to a piece of coarsely polished granite. Such are the appearances of the glands of Peyer, in their sound state. They are not found in every subject; nevertheless they are very frequent. Their presence does not indicate a diseased state of the mucous membrane; but they are themselves susceptible of certain changes, which the author promises to explain in another place.

Some general conclusions follow, and terminate the Essay; but, as these are mere repetitions of what has already been stated in different parts of this analysis, any one who has read it must already have made them for himself; and those who might be desirous of jumping to the conclusions without perusing what precedes, could not possibly understand them.—*Lon. Med. and Phys. Journal.*

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6. *Cause of Barrenness in Prostitutes.*—It is no uncommon thing to see the fimbriated extremity of one or both fallopian tubes adherent to some of the neighbouring parts. In the eighth volume of the Medico-Chirurgical Transactions, p. 505, Mr. Langstaff states that he has noticed this particularly in Cyprians. During the last year two patients who had died in the foul ward of St. Thomas's hospital, and a notorious prostitute who had died in a clean ward, were opened, and the tubes found adherent; both in two of them, and one in the youngest. We have been accustomed to account for the sterility of prostitutes solely by the supposition of exhausted excitability. It is sufficiently explained by these adhesions, which arise, no doubt, from that state of inflammatory turgescence which occurs to the tubes, in common with all the generative organs, during copulation, and causes them to experience a sort of erection and to embrace the

ovaria, being scarcely ever allowed to subside. Not that the occurrence can be universal, because old prostitutes, on marrying after transportation, have occasionally been remarked to breed in New South Wales.—*Med. Chirurgical Transactions*, vol. xiii.

7. *Removal of a great Portion of the Scapula.*—M. Janson, principal surgeon of the Hotel Dieu at Lyons, relates the following case:—A female employed in the manufactory of silk, forty-three years of age, began, in 1819, to perceive a tumour on the posterior and middle portion of her shoulder-blade; it was immoveable, painful to the touch, and appeared fixed to the bone. In 1824, this tumour had acquired the size of a child's head, was hard, wrinkled, and had occupied all the bone, excepting its inferior border and the supra spinal fossa, and had extended itself into the highest part of the axilla, with an elongated and voluminous pedicle. It was moveable in all directions, and carried the arm with it in all the motions given to it. The portion of this swelling which was situated in the axilla, obliged the patient constantly to keep his arm elevated, and at a right angle with the trunk of the body. Violent pains, darting from the shoulder along the arm, were felt in the breast. At length, from want of sleep and indigestion, the patient had become emaciated, and was evidently sinking.

On the 4th of October, M. Janson attempted the removal of the tumor. He included it within two semi-eliptical incisions; dissected the edges of the wound, so as to preserve as much skin as possible, and detached the tumour in every direction: then raising it, and the tumour breaking in the centre throughout its whole thickness, he removed the greatest part; cutting the attachment of the trapezius, of the supra and infra spinatus muscles, he discovered that all that portion of the scapula situated above its spine was in a healthy condition; and, separating by the saw the diseased part of the bone, he thus preserved the articulation of the arm. Finally, laying bare that portion of the tumour situated in the axilla by an oblique incision from below upwards, he dissected it, and drew it upwards carefully; the cellular tissue which fixed it to the arm gave way, and he succeeded in removing it entirely. All the vessels were then tied; the axilla properly supported by a plug; and the edges of the wound, which was six inches across and nine in length, were brought together with sticking-plaster.

For a few days the success of the operation was doubtful, from causes affecting the general health; but these were calmed, and the patient quitted the hospital at the end of two months, nearly cured.—On the 15th of March, it was entirely healed, and the motions of the limb were becoming daily more free.

Archives Gen. August.

8. *Case of Uterine Hemorrhage, successfully treated by the Operation of Transfusion.* By Edward Doubleday, Esq. M.R.C.S. and Fellow of the London Medical Society, &c.

Mrs. Cocklin, æt. twenty-nine, a woman of robust constitution, residing at 59, Brunswick-street, Stamford-street, was delived of a female child, by my friend, Mr. George Franks, on Wednesday, September 28, at a quarter past four A.M. Nothing particular occurred during the birth of the child. The usual means were resorted to, to cause the expulsion of the placenta, but without success. After the lapse of about two hours, hemorrhage came on to an alarming extent. The hand was now introduced into the cavity of the uterus; and the placenta, which was strongly adherent to its fundus, was extracted as speedily as possible.

At this time Mr. G. Franks requested my attendance. At the period of my arrival, I found the uterus contracted upon the placenta, which was now being brought away.

Before and during the extraction of the placenta, so much blood was lost that the woman was reduced to syncope; and her appearance was such that, on my entering the room, I feared speedy dissolution would ensue. The pulse could not be felt at the wrist: the countenance was exsanguineous; lips pale; nostrils pinched sight indistinct; excessive restlessness; breathing hurried, accompanied with frequent sighing; and the body was covered with cold clammy perspiration. I gave her a teacupful of brandy (about six ounces); after which the pulse became just distinguishable. Brandy was repeated at short intervals; and, in addition to this stimulus, carbonate of ammonia and laudanum were administered. These measures were employed vigorously for half an hour, but their influence was very transitory. The pulse was sometimes perceptible and very rapid, and at others could not be felt. No real advantage being obtained by these means, it appeared to me that the only remedy left, by which it was probable that the life of the patient could be preserved, was the operation of transfusion.

I therefore immediately set off for Dr. Blundell, leaving Mr. Franks in care of the patient. I fortunately found the Doctor at home, and he politely accompanied me to her residence without delay.

We found the woman certainly not worse; but, after a deliberate investigation of the present state of the pulse, aspect of the countenance, and the quantity of blood lost, it was Dr. Blundell's decided opinion, in which I fully concurred, that the probabilities against her recovery, without transfusion, were so strong as reasonably to demand the operation. The operation was proposed to the husband, who not only agreed to it, but also to furnish us with the necessary supply of blood.

Dr. B. commenced the operation by exposing the median cephalic vein, which the patient resisted to an astonishing degree. The opposition which was offered on the part of the patient, induced the Doctor to abandon the operation for the time: not, however, with the expectation that she would ultimately recover.

The idea of being left to witness the death of this poor woman, without making the attempt to save her life by the operation of transfusion, operated so powerfully upon my mind as to induce me to request the Doctor to leave his syringe, &c. with a hope that, when the woman was *in articulo mortis*, I should be able to perform it.

Mr. G. Franks was again left in care of the patient, with directions to continue the stimulants, &c. &c. About half-past two o'clock P. M., *being upwards of six hours after the hemorrhage had stopped*, I received a note from him, stating that she was *sinking very fast*, and that he did not believe she would be alive by the time I could get there. I immediately proceeded to the spot, and found the patient all but gone. At this time twenty ounces of brandy, 160 drops of laudanum,* and a considerable quantity of ammonia, had been given; besides the yolks of three eggs beaten up in brandy, and some beef-tea and gruel.

As no time was to be lost, and as the friends were anxious that the operation should be tried, I at once proceeded to pass a blunt needle under the vein which had been already exposed by Dr. B. When this was accomplished. I made an opening into it, large enough to admit the beak of the syringe. Mr F. placed his finger upon the vein, and gently pressed it upon the needle, in order to prevent any loss of blood. A vein in the arm of the husband was now opened freely, and the blood allowed to flow into a conical drinking-glass; and, as it flowed into the glass, I absorbed it into the syringe, taking care to keep the beak at the bottom, which was covered with about half an ounce of blood. The object of this precaution was to prevent any bubbles of air from being absorbed with the blood: but, to be quite positive on this head, I placed the syringe with the beak perpendicularly above the handle,—that is, with its nosle upwards,—and forced a little blood through it, before I introduced it into the vein. The beak of the syringe being carefully introduced into the opening made in the vein, the blood was gently forced in, in a direction towards the heart. As the syringe was emptied, *the pulse rose.* The syringe was refilled, but not before the small quantity of blood which was left in the glass was thrown away; and, as this second quantity was injected, *the pulse became broader*, and the appearance of the lips and countenance much improved. Another syringeful was thrown in, (making six ounces,) in the same way, with very marked improvement in the condition of the patient. So much was she recovered, that, to use her own language, she exclaimed "I am as strong as a bull!" As the fourth syringeful was being injected, she stated she felt the blood going up the veins. This injection produced additional improvement in her aspect and in the pulse, which was such as indicated considerable power in the system; and she stated that she felt quite recovered.

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* The laudanum was given within the first two hours after the flooding had ceased, with a view to allay the extreme restlessness; and apparently with benefit.

I here hesitated whether it would not be better to stop the process; however, as there was no unfavourable symptom, and as the patient had improved upon the injection of every additional quantity, I determined to go on till something should occur which might induce me to believe that the operation should not be proceeded in further. I accordingly threw in *three* more syringefuls in the same way, (making fourteen ounces,) with continued improvement in the power of the pulse; which now led me to believe that, notwithstanding the *copiousness* of the *flooding*, the *large vessels* were distended as much as at any time during health. She at this period complained of a little pain over the left eye, which induced me to discontinue the process of injection, thinking that as much blood had been thrown in as the woman could bear with impunity. The opening in the vein was therefore closed in the usual way.

The pulse, some time previous to the operation, when it could be numbered, was 140, *but was now reduced to* 104. *A-quarter of an hour after the operation, it was* 98; *in half an hour*, 90. *The pulse, for the most part, was strong, soft, and full, but somewhat irregular, and continued so for upwards of two hours. At about the expiration of an hour after the blood was injected, she sat up, and assisted the nurse in undressing and in making herself more comfortable, as if nothing had occurred beyond what is observed in ordinary cases.*

Half-past six, P. M. (three hours after the operation.)—Pulse 94, strong, and full; skin hot; tongue becoming furred; thirst considerable; has had some little uterine pain; bowels constipated. These symptoms might be attributed, in a great measure, to the influence of the brandy, ammonia, and opium. I now ordered a purgative enema, which was immediately injected.

Half-past eight, P. M. (five hours after the operation,) I again saw her. She had slept a little since my last visit. The enema had produced two copious evacuations. Pulse 120; skin perspiring freely; tongue moist. Has taken nothing into the stomach since the operation. At this time she felt restless, and had some pain in the hypogastric region, which induced me to order sixty drops of tincture of opium.

Half-past eleven, P. M. (eight hours after the operation.—*Nothing has been taken into the stomach since the operation was* *performed.* Skin covered with copious perspiration. Has had some refreshing sleep.—Ordered an aperient.

Thursday, six o'clock, A. M.—Slept comfortably through the night. Pulse varying from 96 to 100; skin perspiring, tongue somewhat coated, but moist; thirst considerable; bowels not open.—Aperient medicines continued.

In the evening I again saw her, and examining the arm, found some inflammation had taken place in the course of the vein. On tracing the vein accurately with my fingers, I found the tenderness increase as I approached the axillary vein, where it empties itself. Pulse 100, strong, and jerking; tongue dry, and rather brown in the centre, but white and moist towards the edges; skin perspiring. Secretion of milk so copious as to produce considerable pain in the breasts. I am disposed to think that the state of the mammæ was the principal cause of these symptoms, as the febrile action was not more than what is frequently observed when the breasts are full and painful; but how far they may have been increased in this instance by the inflammatory action of the vein, is uncertain. Twelve leeches were immediately ordered to the arm in the line of the vein, with directions to apply fomentations to the limb as soon as they dropped off. The lint was taken from the wound, and a poultice applied. These measures, assisted by purgatives, nearly subdued the inflammation and slight tumefaction which had taken place.

Friday.—There was left some tenderness at the upper end of the vein, which had not apparently diminished since my last visit, but which was removed by the application of six more leeches. The secretion of milk was copious, and rather troublesome, as it gave her pain, and required the breasts to be drawn frequently.

It would be useless to detail minutely the subsequent treatment in this case. Suffice it to say, that it consisted of saline aperients, as occasion required, and such other medicines as are usually given in common cases.

October 4th.—The seventh day after the operation, she felt quite well, but the wound in the arm was not cicatrised. The medicines were discontinued.

I have to add, that, in consequence of over-exertion in the management of her household affairs, slight inflammation was reproduced in the vein on the 5th October, which is not yet entirely subdued.* This has not excited the system at any time, so as to influence the pulse in any considerable degree. It has not been, at any instance since the inflammation recommenced in the vein, above eighty in a minute.

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* Perhaps, where there is choice, it would be better to inject blood in the left arm, instead of the right, which was resorted to in this instance, as the left is less likely to be injudiciously used during convalescence.

From this case every thinking mind will, of course, deduce its own inferences.

It might be presumed that, in consequence of the resistance made to the exposure of the vein, and the general restlessness of the patient, she could not have been so much exhausted as I have above stated. These symptoms, however, are common, and are not to be regarded as indicative of strength in such cases, but of some peculiar disturbance of the nervous system, which I am not prepared to explain; and I am borne out in this opinion by their general termination, and by the subsequent assertions of the patient, who said that she had no recollection of having made resistance. This violence appears to me to be allied to that jactitation which sometimes immediately precedes death from flooding, and which I once had an opportunity of witnessing in a woman who died in my presence three hours after the delivery, notwithstanding the most vigorous means were made use of for her preservation.

From the facts above related, it seems to me we learn—

First, That fourteen ounces of blood from the veins of a man may be received in a tumbler, and transferred by means of a syringe, with the greatest facility, to the veins of a woman nearly exhausted by bleeding, without necessarily destroying life, or even, of necessity, producing any dangerous symptoms.

Secondly, From this case, viewed in connexion with that of the woman in Grub-street, operated upon by Dr. Blundell and Mr. Waller;* we might infer that, although symptoms of slight syncope may occur under transfusion, they are not necessarily inseparable from the operation, but accidental; as in this woman, during the operation, effects the very reverse were observed: instead of any appearance of syncope, sudden, and even surprising, invigoration of the system were produced.

Thirdly, As this woman, after the injection of six ounces of blood, felt an increase of strength astonishing even to herself, and as, after the operation, there was a great deal of mammary action, approaching to inflammation, as well as other proofs of a thorough invigoration of the system, it may, I think, be fairly inferred that the injection of fourteen ounces of blood was more than sufficient to supply her wants. It is not unlikely that eight ounces would, under her circumstances, have been enough; and this case, therefore, gives an additional probability to the opinion that the four ounces transfused in the Grub-street case really preserved the life of the patient, as this woman was rather under the middle size.

Fourthly, Two successive cases of transfusion, unattended with dangerous consequences, do not, of course, demonstrate that the operation is wholly secure from danger; but they may raise in us a reasonable hope that such may hereafter be found to be the case. The tenderness and swelling in the line of the cephalic vein, however, though at no period alarming in this woman, must not be lost sight of: but how far it may be accidental, time must decide.

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* See the last Number of this Journal.

Fifthly, should the operation hereafter not only prove practicable and easy, but very safe, there are various other cases, besides those of desperate inanition, in which it might be employed with probable advantage. To enumerate these, however, I am not at present prepared; but Dr. B. has suggested to me, in conversation, that perhaps the operation may be found serviceable in cases where too much blood has been taken from the arm, and in those cases where, in consequence of floodings during delivery, various morbid symptoms may be expected, although they be not dangerous to life. Great care, however, must be taken not to abuse the operation, by a too-frequent and unnecessary resort to it.

Sixthly, As this woman survived, it cannot be incontrovertibly asserted that, if the operation had not been performed, she must certainly have sunk. In all these cases there will be room for difference of opinion; but that women do die from uterine bleedings, half an hour, an hour, nay sometimes two, three, or more hours, after the hemorrhage has been arrested, is well known: and, I presume, the most sceptical will not deny that fourteen ounces of healthy blood would be sufficient to turn the scale in their favour.

In my humble opinion, it is much to be regretted that this operation has been so long neglected: the deaths of several women from hemorrhage have recently come to my knowledge; and it is probable that hundreds of persons have died since it was first promulgated, whose lives, I think it is not too much to say, might have been preserved by a timely resort to it.

In conclusion, I may say that I feel satisfied it will be found an operation simple and easy; requiring only common care, common caution, and common ability to perform it with success, as far as the operation is concerned, in all such cases as that which I have above related.—*Lond. Med. and Phys. Journal.*

62, *Great Surrey-street, Blackfriars-road;*
October 10*th*, 1825.

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9. *On the Effects of Loss of Blood.* By Dr. Marshall Hall.—The subject of this paper is of the highest interest, both in a physiological and practical point of view, and we recommend it as meriting particular attention: it is the most important in the volume. It is stated by Dr. Hall, and justly, that the effects of loss of blood are frequently such as suggest the idea of increased power of the system; thence leading us to the further employment of the lancet, under circumstances when its use is highly prejudicial. As an example, we may refer to the throbbing of

the carotids, and apparent determination to the head, which follow uterine hemorrhage, or any other very copious depletion; a state of symptoms leading an inexperienced practitioner to the idea that still further evacuation is required to free the system from the increased arterial action. This we have had occasion to see, and therefore conclude that others are equally familiar with the fact. But we must return to the author before us. In giving us the results of his observations on the effects of loss of blood, he adopts the following arrangement:—

"I. Of the immediate effects of loss of blood, chiefly syncope, and of the re-action or failure of the vital powers.

"II. Of the more remote or cumulative effects of repeated or protracted loss of blood, or *exhaustion:* and 1, of exhaustion with excessive re-action; 2, of exhaustion with defective re-action; 3, of exhaustion with sinking.

"III. Of the effects of further loss of blood in cases of exhaustion. 1, Of the substitution of syncope for re-action; 2, of the transition of the state of re-action into that of sinking; 3, of sudden dissolution.

"IV. Of the influence of various circumstances on the effects of loss of blood. 1. Of age, &c.; 2, of disease.

"V. Of the effects of loss of blood on the internal organs. 1. The brain; 2, the heart; 3, the lungs; 4, the intestinal canal, &c."

I. With regard to the immediate effect of loss of blood, the most common is syncope. In this condition the phenomena seem to indicate that the brain is the part the function of which is first impaired: next the respiration suffers, and the action of the heart becomes weakened, both from the diminished quantity of blood brought to it, and from the difficulty in its arterialisation.

"In cases of profuse hemorrhagy, the state of the patient varies: there is at one moment a degree of syncope, then a partial recovery. During the syncope, the countenance is extremely pallid; there is more or less insensibility; the respiratory movements of the thorax are at one period imperceptible, and then there are irregular sighs; the pulse is slow, feeble, or not to be distinguished; the extremities are cold, and the stomach is frequently affected with sickness. I have observed that when the movements of the chest, in the interval between the sighs, have been imperceptible or nearly so, the respiration has still been carried on by means of the diaphragm. It may also be remarked, that the state of syncope is often relieved, for a time, by an attack of sickness and vomiting; immediately after which, the patient expresses himself as feeling better; the countenance is somewhat improved, the breathing more natural, and the pulse stronger and more frequent.

"In cases of fatal hemorrhagy, there are none of these ameliorations. The symptoms gradually and progressively assume a more and more frightful aspect. The countenance does not improve, but becomes pale and sunk. The consciousness sometimes remains until towards the last, when there is some delirium; but every thing denotes an impaired state of the energies of the brain. The breathing becomes stertorous, and at length gasping. The pulse is extremely feeble, or even imperceptible. Animal heat fails, and the extremities become colder and colder, in spite of every kind of external warmth. The voice may be strong, but there is constant restlessness and jactitation. Ultimately the strength fails, and the patient sinks, gasps, and expires." (P. 124–5.)

The system usually rallies spontaneously from syncope; and the act by which the recovery is effected, is called re-action. Now this re-action may be either excessive or defective, or altogether wanting. The phenomena resulting from these circumstances form the subject of subsequent inquiry: at present it is only to be added, that loss of blood occasionally gives rise to attacks of convulsions, instead of syncope.

II. The recovery, under favourable circumstances, is generally a simple return to health, the pulse not exceeding its natural frequency. When the bleeding has been profuse, the pulse becomes, and continues for some time, more frequent than natural; and if the individual instead of a copious loss of blood occurring at one time, is subjected to repeated venesection, the pulse acquires an increased frequency, with throbbing, and occasionally all the symptoms of excessive re-action. They are thus described:

"The state of excessive re-action is formed gradually, and consists, at first, in forcible beating of the pulse, of the carotids, and of the heart, accompanied by a sense of throbbing in the head, of palpitation of the heart, and eventually, perhaps, of beating or throbbing in the scrobiculis cordis, and in the course of the aorta. This state of re-action is augmented occasionally by a turbulent dream, mental agitation, or bodily exertion. At other times it is modified by a temporary faintness or syncope. In the more exquisite cases of excessive re-action, the symptoms are still more strongly marked. The beating of the temples is now accompanied by a throbbing pain of the head, and the energies and sensibilities of the brain are morbidly augmented. Sometimes there is intolerance of light, but still more frequently intolerance of noise and disturbances of any kind, requiring stillness to be strictly enjoined, the knockers to be tied, and straw to be strewed along the pavement. The sleep is agitated and disturbed by fearful dreams; and the patient is liable to awake in a state of great hurry of mind, sometimes almost approaching to delirium. In general this is slight, but occasionally severe and even continued. More frequently there are great noises in the head, as of singing, of crackers, of a storm, or of a cataract; in some instances, flashes of light are seen.

Sometimes there is a sense of great pressure, or tightness, in one part or round the head, as if the skull were pressed by an iron nail, or bound by an iron hoop.

"The action of the heart and arteries is morbidly increased; and there occur great palpitation and visible throbbing of the carotids, and sometimes even of the abdominal aorta, augmented to a still greater degree by every hurry of mind or exertion of the body, by sudden noises or hurried dreams and wakings. The patient is often greatly alarmed, and impressed with the feeling of approaching dissolution. The state of palpitation and throbbing are apt to change, at different times, into a feeling of syncope. The effect of sleep is in some instances very extraordinary; sometimes palpitation, at other times a degree of syncope, or an overwhelming feeling of dissolution. The pulse varies from 100 to 120 or 130, and is attended with a forcible jerk or bounding of the artery.

"The respiration is apt to be frequent and hurried, and attended with alternate panting and sighing. The movement of expiration is sometimes obviously and singularly blended with a movement communicated by the beat of the heart; the patient requires the smelling bottle, the fan, and fresh air. In this state of exhaustion, sudden dissolution has sometimes been the immediate consequence of muscular effort on the part of the patient.

"The phenomena of excessive re-action are mostly observed in young persons of robust constitution, who have been subjected to repeated blood-letting. In infants, in feeble persons, and in rather advanced years, re-action after loss of blood is for the most part defective. In this case the patient long remains pale, thin, and feeble, and becomes faint on the slightest occasions: the pulse is frequent, but feeble, and perhaps irregular: and we look in vain for the throbbing and palpitation observed in the young and robust. This state either gradually yields to returning strength, or subsides into the state of sinking. In the study of the effects of loss of blood, it is particularly necessary to bear in mind this difference of the phenomena arising out of the previous state of the constitution, whether of vigour or of feebleness." (P. 127—129.)

These symptoms, indicative of exhaustion with excessive re-action, may gradually pass away, or they may give place to *sinking*. In this, the sensibility is diminished, there is a tendency to dozing, with snoring; stertor, or blowing-up of the cheeks in breathing, a symptom which all must have observed in apoplectic affections. The patient is inattentive to what is passing around him; forgets his situation; requires a moment to recollect himself when spoken to, and soon relapses into dozing. In addition to these circumstances, our author has remarked "a crepitus in respiration, only to be heard at first on the most attentive listening:" this soon increases, passing into rattling in the throat. There is some degree of labour in the breathing, inducing acuteness in the nostrils, and occasionally a peculiar cough. The heart loses its palpitation, and the arteries their throbbing; the stomach and bowels become affected with flatulence; the will loses its command over the sphincters; delirium, jactitation, and coldness of the extremities, mark the approach of dissolution. A very interesting and important case illustrates some of the phenomena above mentioned, which, however, is unfortunately too long for quotation.

III. Dr. Hall next considers the effect of further loss of blood in cases of exhaustion, and states his belief that the symptoms of re-action have frequently been mistaken for those of inflammation of the head or heart; under which impression, patients have been bled still further, the effect of this being the temporary relief of the symptoms. Here, as throughout the paper, we mark and bear testimony to the accuracy of the author's observations. It was some time before he could comprehend the nature of this fact, but at length he perceived that the symptoms relieved were those of re-action, and that the mode of relief consisted in the substitution of syncope. Yet, although relief be given for a time, the remedy eventually adds to the severity of the malady, in the majority of cases. It is to be observed, that re-action seldom supervenes from one depletion however copious; while the repetition of this is very apt to produce it. When re-action has supervened, syncope very readily follows any further loss of blood. "This fact is of importance, because it may be regarded as a sign of the state of exhaustion when obscured by the re-action of the system, and as a warning voice against further and inconsiderate use of the lancet." When the depletion is still further repeated, then not merely syncope, but sinking, comes on, and with it the train of phenomena already described.

IV. This section relates to the influence of various circumstances on the effects resulting from the loss of blood. Of these, the strength is the first and most important, the degree of re-action being in proportion to it. In feeble constitutions, as in infancy and declining years, the re-action is defective, and the state of syncope is one of danger, so that a repetition of the bleeding is borne with difficulty. Just the reverse of this occurs in the robust when the re-action is strong: in these, indeed, the state of sinking is preceded by great re-action, unless the strength be overwhelmed by the extent of the evacuation. Other circumstances exerting an influence over the effects of blood-letting, are certain diseases; and it is particularly stated by the author, that "intestinal irritation leads to those effects of blood-letting which I have described as exhaustion: whilst inflammation seems to protect the system from the effects of loss of blood:" so that, taking health as the medium, the presence of intestinal irritation would lead to the more speedy, and of inflammation to the more tardy, occurrence of exhaustion.

V. The effect of loss of blood on the internal organs is very little known. The author conjectures that effusion into the ventricles of the brain takes place; and that there is, "even in cases of exhaustion from loss of blood, increased action or fulness of the vessels of the brain." There is certainly, in cases of great exhaustion from any evacuation, a tendency to serous effusion throughout the cellular membrane generally.

Dr. Hall purposes to investigate the *organic effects*, and especially the *remedies*, of loss of blood. To these we look forward with the anticipation of additional information upon this interesting subject.

The remaining contents of the volume consist of little more than cases, such as usually are, and ought to be, published in Medical Journals, rather than in the Transactions of a learned Society. Some of these we shall probably give in our Collectanea on some future occasion.—*Lond. Med. and Phys. Journal.*

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9. *Successful Case of High Operation for the Stone;* by A. Copland Hutchison, Esq.—The patient being placed on a mattress upon a table of ordinary height, with a pillow under his head: the pelvis raised considerably higher than his shoulders, with the view of removing the peritoneum as far from the parts to be cut as possible; while his feet rested upon chairs; standing on the right side of the patient, I made an incision, nearly four inches in length, with a scalpel, in the line of the linea alba through the integuments downwards over the front of the pubes; which latter step I found of great advantage, both during the operation and in the subsequent treatment of the case. The incision was carried on down towards the bladder, between the pyramidales muscles, and through the linea alba: the latter being first punctured, and afterwards cut *transversely upon the symphysis pubis*, dividing some of the fibres of the pyramidal muscles on each side as we proceeded, so as to give a more free passage for the extraction of the stone. I then, with a director, detached this tense membrane (the linea alba) from its subjacent adhesions, and divided it upwards with a probe-pointed bistoury, introduced into the groove of the director, until I could readily insert the fore-finger of my left hand, which is, on all occasions, the best director; and which was most conveniently done by standing between the legs of the patient. When about two inches and a-half of linea alba were thus divided, I thought we should have had sufficient space for cutting into the bladder, and extracting the stone; but, as the wound appeared deep and narrow, and there was a large calculous to extract, I cautiously extended the incision half an inch more, in the manner already described.

The bladder, very much contracted, was now clearly seen covered by fat, and was raised through the fat, upwards and forwards, to the external wound of the integuments, upon the point of a silver staff, with a groove in its concave part, extending from close to its point downwards about two inches, and which I preferred to the *sond* used by the French surgeons, that instrument appearing to me both unnecessary and unscientific. The handle of the silver staff being held in a depressed position by my friend Mr. Brown, the anterior part of the fundus of the bladder was pierced from without, by a straight sharp-pointed bistoury, passing its point into the groove of the staff, and carrying the incision downwards and forwards to the pubes, until there was room for the fore-finger, which was introduced for the purpose of ascertaining the size of the calculus, that the opening in the bladder might be enlarged accordingly. Having satisfied myself on this head, I hooked up the fundus of the bladder with my finger, and enlarged the incision towards its cervix, sufficiently to admit of the free extraction of the stone. Some little difficulty here arose in disengaging the stone from its situation, notwithstanding the great assistance obtained by the introduction of the fore-finger of my right hand into the rectum, while the fore-finger of my left was in the bladder, to cant or turn the stone, so as to extract it by its smaller axis: and, indeed, this was not effected until the single blade of a pair of small stone-forceps was introduced. The stone being thus turned, it was easily removed with the finger and thumb. In point of fact, so firmly did the bladder grasp the calculus, that the idea was conveyed to our mind of its actual adhesion to the coats of that viscus.

One small cuticular artery was divided at the first incision, and secured at the time, to prevent the future steps of the operation being obscured by the bleeding, and the subsequent issue of blood into the cavity of the pelvis.

Two slips of linen, dipped in oil, were introduced through the external wound on each side of, but not into, the bladder. A gum-elastic catheter was passed into the bladder, so as just to enter its cavity, and no further, and was secured in this situation by tapes attached to the instrument, and to an elastic band, or retainer; which in this case was made of flannel, lined with calico. The sides of the wound were brought together by slips of sticking-plaster, and the parts supported by a flannel roller, passed three or four times round the pelvis and the lower part of the abdomen. The patient, by means of pillows, was placed on an inclined plane; a vessel was secured to the end of the catheter to receive the urine; and he had an anodyne drought administered to him.

I am fully aware that there are those who may imagine the trifling difficulty we experienced in extracting the stone, arose from the depth, narrowness, and consequently from the supposed tightness, as it were, of the wound, through the parietes of the abdomen; but I can assure them that such was not the fact, for I enjoyed the most perfect freedom in that respect. The circumstance, in my mind, arose rather from the position of the stone, its size, and the strong contraction of the bladder upon it; for it will be borne in recollection that the bladder, in this case, had never been distended beyond the size of the calculous, and that which two ounces of urine would occasion. What the bladder wanted in capacity, it possessed in the increased thickness of its parietes, for it was fully a-quarter of an inch thick at the part divided; so that its muscular power must, therefore, have been considerable. I cannot avoid, in this place, repeating the great advantage to be derived from dislodging the stone in such cases, by the introduction of the finger into the rectum, and which appears to me a great improvement in this mode of operating.* *Letter to* Sir E. Home, Bart.—*Journal of Science*, October.

11. *Non-Contagious Nature of Yellow Fever.*—Dr. Costa read, before the Royal Institute of France, a memoir on this subject. The facts and observations related in this work have been collected from the sources of the disease; Dr. Costa having been physician to a lazaretto. After describing the state of affairs at Barcelona, and the precautionary measures adopted on the frontiers, which he considers as very inefficient, had contagion really existed, the author does not hesitate to affirm that the disease is not contagious. Nay, so persuaded is he of this fact, that, together with MM. Lassis and Lasserre, he proposes to make experiments on this subject. He requests that clothes which have been worn by persons who have died of the disease, may be sent to him from the Havannah, or wherever the disease is found to exist: these clothes, hermetically sealed during the passage, shall be worn by these gentlemen, without making use of any disinfecting medium.—*Revue Medicale*, Août.

12. *Alteration in the Bones of the Head.*—A report was made by MM. Emery, Ribes, and Murat, upon a diseased cranium, presented by M. Duvergie. This cranium belonged to a veteran, who had died of disease of the heart. There was a considerable thickening of all the anterior part of the frontal bone, of the ethmoid, and part of the sphenoid bone. The projections which the internal plates of the frontal sinuses and the crista galli made, had displaced the optic nerve on one side; and, nevertheless, no leison of vision had occurred during life.—*Ibid.*

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* The patient did well, recovering very speedily.

13. *Dropsy of the Epiploon, in a Fœtus of eight months.*—Dr. Ollivier, who relates this case, commences by remarking that it is now clearly established that the fœtus in utero is subject to nearly the same maladies that are occasionally developed after its birth,—such as phlegmasiæ, &c. and some more particularly connected with the situation of the fœtus in utero. A woman, whose health had been constantly good, was brought to bed, at the end of the eighth month of her pregnancy, of a dead child, but which was well formed. Dr. Ollivier was much struck with the enormous size of the abdomen, the thin parieties of which rendered the fluid which distended it perfectly visible. On opening the abdomen, some spoonsful of a yellow and transparent serum escaped; the peritoneum was colourless, and had no appearance of vessels. The cavity of the abdomen was entirely filled with a transparent tumor formed by the epiploon, the layers of which were separated by a serous, yellow, limpid fluid, contained between them, and in the midst of which flocculi of albumen floated. The surface of the tumor was marked unequally by the vessels which ran in the substance of the epiploon, and which thus formed several irregular, inelastic bridles or bands. The posterior layer was in one spot slightly opaque; the remaining portion possessed its usual transparency. The foramen of Winslow was completely open; and it is presumed that the small quantity of water which escaped from the cavity of the peritoneum had found its way by this aperture. All the viscera of the Abdomen were otherwise sound.—*Archives Generales*, July.

14. *Encysted Tumors in the Abdomen.*—M. Andral (fils) communicated to the Royal Academy of Medicine the following fact:—A man was admitted into La Charité with a tumor in the abdomen, filling both the hypochondria and the epigastrium. Some months previously he had felt dull pains in the right hypochondrium, and had the jaundice. He died at the end of some time, having suffered by turns the symptoms of phthisis, of enteritis, and peritonitis. On opening the body, tubercles were found in the lungs; a sero-purulent fluid, with false membranes, in the peritoneum; redness of the large intestines: besides the three following diseased appearances:—1. A tumor of the size of a full-grown fœtus; head situated between the right kidney and the concave surface of the liver: it appeared to have originated from the peritoneum: its parieties were fibrous, and it was filled with a purulent fluid, in the midst of which the remains of hydatids were floating. M. Andral believes that this cyst had originally been an hydatid sac, in which hydatids had been successively broken, destroyed, and replaced by pus. The tumor had displaced the liver, which, driven out of the right hypochondrium, filled the epigastric region, and formed a prominence on the left side; besides which, the right lobe of the

liver, pressed by the tumor, had suffered a complete atrophy; whilst the left lobe had increased in a very unusual degree. 2. A second cyst, filled equally with broken hydatids, was situated on the course of the biliary vessels, and compressed them. Around and between the broken membranes of the hydatids, there was a quantity of suety matter, similar to that which is sometimes found in ovarian cysts, where it is usually mixed with hair. 3. An old and solid coagulum, which completely obstructed the vena cava inferior, from the origin of the renal vessels to a little above the primitive iliacs. This clot resembled those fibrous layers which fill the sac of aneurisms. The parietes of the vein had suffered a remarkable thickening, as if the result of chronic inflammation: nevertheless, there was not any œdema of the lower extremities.—*Archives Generales*, August.

15. *Aneurismal Diathesis.*—M. Chomel presented to the Royal Academy of Medicine a heart, with its aorta, upon which that alteration of tissue constituting the principle of aneurism was found extended over a considerable surface. The heart was rather larger than natural; the parietes of the right ventricle thicker than those of the left. The aorta was uneven throughout its whole extent; and these inequalities were caused by white patches, semi-cartilaginous, which formed the greater part of its surface. From its origin to the distance of three inches and a-half, it presented three hollows, circumscribed by a marked projection; one on the right side, a second on the left, and a third above the former. These depressions, from six lines to an inch broad, and from two to eight lines in depth, had only cellular tissue for their Parietes, or the internal tunic of the artery thickened, and preserving no distinct structure. Even this tissue had suffered the same alteration in a portion of its circumference.—*Revue Medicale*, Août.

16. *Softening of the Stomach.*—M. Ferries presented to the Royal Academy of Medicine two cases of softening of the stomach. In one, the alteration was not announced during life by any remarkable symptom, which renders it more doubtful whether it always be a consequence of inflammation: the patient was merely affected with scurvy. Could that disease have been the cause of the softening?—*Ibid.*

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